Symantec LiveState™ Recovery Manager Implementation Guide

Symantec LiveState™ Recovery Manager 3.0 Implementation Guide

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- Hardware information
- Available memory, disk space, NIC information
- Operating system
- Version and patch level
- Network topology
- Router, gateway, and IP address information
- Problem description
  - Error messages/log files
  - Troubleshooting performed prior to contacting Symantec
  - Recent software configuration changes and/or network changes

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- General product information (features, language availability, local dealers)
- Latest information on product updates and upgrades
- Information on upgrade insurance and maintenance contracts
- Information on Symantec Value License Program
- Advice on Symantec's technical support options
- Nontechnical presales questions
- Missing or defective CD-ROMs or manuals

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Chapter 1

Introducing Symantec LiveState Recovery Manager

This chapter includes the following topics:

- About Symantec LiveState Recovery Manager
- Components of Symantec LiveState Recovery Manager
- What you can do with Symantec LiveState Recovery Manager
- Best practices for backup protection
- Where to find more information

About Symantec LiveState Recovery Manager

Symantec LiveState Recovery Manager is designed to work with Symantec LiveState Recovery Advanced Server, Standard Server, and Desktop editions to provide enterprise-level management tasks for server or desktop protection.

Using the product, you can centrally monitor backup status for thousands of remote Windows servers and desktops across your organization, all from a single console. You can view the status of backups on the network and quickly see which computers are protected and which computers need Symantec LiveState Recovery for protection.

Note: To get started using the product, see "QuickStart" on page 15.

Symantec LiveState Recovery Manager includes most of the core backup job features of Symantec LiveState Recovery, and the following enterprise feature:

- The Create LiveState Recovery Files wizard to create a one-time package of the Symantec LiveState Recovery agent or the entire Symantec LiveState Recovery product for storage on the Symantec LiveState Recovery Manager server. You can later deploy those packages to computers or groups of computers in your enterprise.

The version of Symantec LiveState Recovery that you may already own (Advanced Server, Standard Server, or Desktop edition) has the following components:

- Symantec LiveState Recovery standard console
- Symantec LiveState Recovery agent
- Backup Image Browser
- Symantec Recovery Environment

For more information about these components, see the product's Implementation Guide or User's Guide.

It is important to note that the Symantec LiveState Recovery Manager console does not include the standard console, Backup Image Browser, or Symantec Recovery Environment. (Pre-built install packages of Symantec LiveState Recovery agent for Advanced Server, Standard Server, and Desktop are included with Symantec LiveState Recovery Manager.) The product console includes the same features as the standard console and the additional enterprise features listed earlier.

You will need access to your Symantec LiveState Recovery Advanced Server, Standard Server, or Desktop edition installed program or product CD for the following:

- Using the Symantec Recovery Environment to perform bare-metal recovery of an operating system or files and folders.
- Using the Backup Image Browser to mount backup images or restore individual files and folders from a backup image.
- Using the Symantec LiveState Recovery product CD in the Symantec LiveState Recovery Manager console to create install packages.

Components of Symantec LiveState Recovery Manager

An installation of Symantec LiveState Recovery Manager consists of several main components for managing backups on computers, and the ability for you to create and update install packages of Symantec LiveState Recovery on computers.

Note: To get started using Symantec LiveState Recovery Manager, see "QuickStart" on page 15.

Table 1-1 describes these main components.

Table 1-1 Components of Symantec LiveState Recovery Manager

Component	Description
Symantec LiveState Recovery Manager console	The console, which can be installed on any computer (Windows 2000 or higher), lets you remotely run and manage backup tasks on remote computers from a central location. It serves as the main interface to the Symantec LiveState Recovery Manager server. From the console, you can create install packages of Symantec LiveState Recovery and backup jobs, and deploy them to target computers. See "Starting the console" on page 15.
Symantec LiveState Recovery Manager server and database	The server and database provide the support files that are needed to integrate with the console. The database stores each computer's backup information (history, location, file size, consolidation, schedule, disk layout, events). See "Starting the console" on page 15.

Table 1-1 Components of Symantec LiveState Recovery Manager

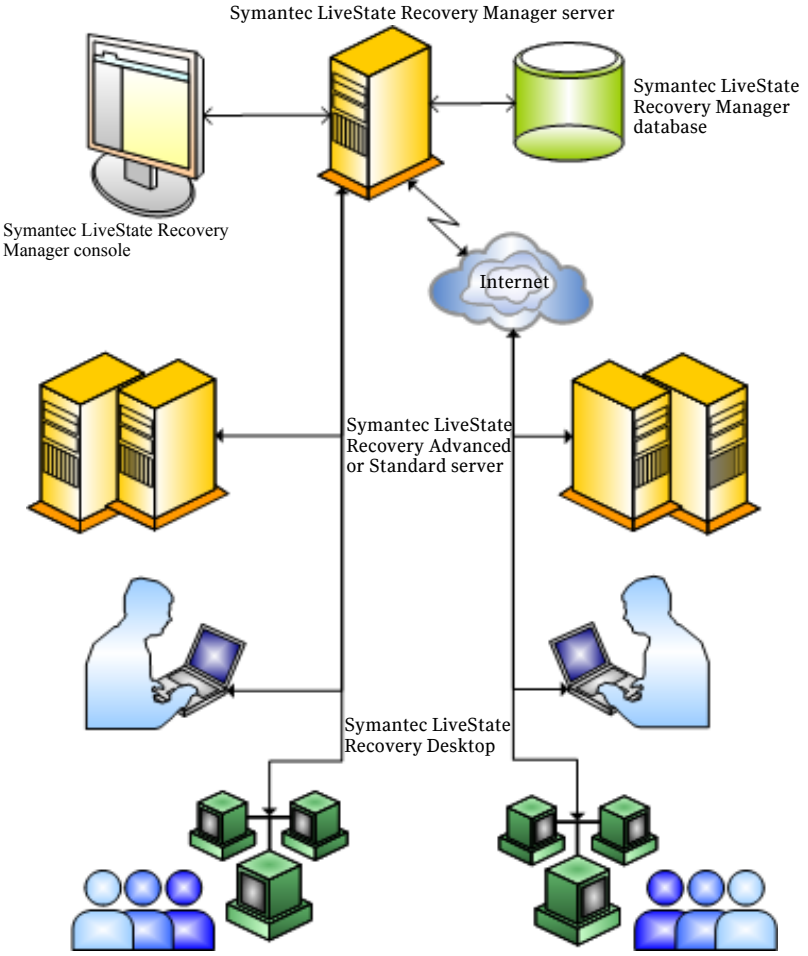
Component	Description
LiveState Agent	The LiveState Agent is a necessary component for deploying install packages of Symantec LiveState Recovery. It also polls the Symantec LiveState Recovery Manager database for backup jobs that need to be downloaded and reports status information back to the console. When you add computers to the console, the LiveState Agent is automatically deployed from the Symantec LiveState Recovery Manager server and installed on the computers as a "traffic light" tray icon in the Windows system tray. The different colored indicators on the tray icon mean the following: ■ Red – The agent is currently running an install package. ■ Yellow – The agent is communicating with the Symantec LiveState Recovery Manager server to get job information. ■ Green – The agent is idle. You can also hover the mouse pointer over the tray icon to get status information. See "Adding unmanaged computers" on page 30.
Management Control	Management Control is a component of Symantec LiveState Recovery Manager that gets installed when you deploy an install package of Symantec LiveState Recovery to the computers you added to the console. After the component is installed, it publishes a variety of information back to the server regarding the state of the computer, including the status of backups. See "Creating install packages" on page 24 and "Deploying install packages" on page 32.

Table 1-1 Components of Symantec LiveState Recovery Manager

Component	Description
Symantec LiveState Recovery install packages	Symantec LiveState Recovery Manager lets you create and update installation packages of Symantec LiveState Recovery for deploying to one or more Windows NT/ 2000/2003 Server/XP computers across your local area network or wide area network. Depending on your needs, you can create install packages of the full Symantec LiveState Recovery product, the Symantec LiveState Recovery agent only, or both. The install package, which also contains a Management Control component, is deployed to target computers you select in the console. **Note:** Symantec LiveState Recovery Manager ships with three pre-built install packages: ■ Symantec LiveState Recovery 3.02 Advanced Server - agent only. ■ Symantec LiveState Recovery 3.02 Standard Server - agent only. ■ Symantec LiveState Recovery 3.02 Desktop - agent only. You can use these existing packages and, if you already own Symantec LiveState Recovery product, you can create packages of the full product, if desired. See "Creating install packages" on page 24 and "Deploying install packages" on page 32.
LiveUpdate	The Symantec technology that lets any installed Symantec products connect to a Symantec server automatically and receive program and virus definition updates. This ensures that you have the most current software updates that are associated with your version of Symantec LiveState Recovery Manager console.

Figure 1-1 illustrates a basic use scenario for Symantec LiveState Recovery products.

Figure 1-1 A basic use scenario for Symantec LiveState Recovery products


Symantec LiveState Recovery Manager server
Symantec LiveState Recovery Manager database
Symantec LiveState Recovery Manager console
Internet
Symantec LiveState Recovery Advanced or Standard server
Symantec LiveState Recovery Desktop

What you can do with Symantec LiveState Recovery Manager

Symantec LiveState Recovery Manager lets you protect the data of remote server, desktop, and laptop computers from a consolidated view.

You can use LiveState Recovery Manager in the following ways:

- Home Page status screen with resolution options – From a consolidated view you can monitor the overall status of backups for an entire network.

You can also see at a glance the number of successful backups, disconnected computers, and computers that have no backup jobs schedule. Total status numbers are shown graphically. Click hyperlinks to resolve any identified issues.

- Deploy servers and desktops agents – Remotely install (or remove) LiveState Recovery software, agents, and upgrades to Windows servers and desktops you want to protect.
- Deploy backup jobs – Define immediate, daily, weekly, or monthly backup jobs for groups of computers, and deploy the jobs through a drag-and-drop interface.
- Monitor remote computer backup performance – Resolve issues using a centralized path to each computer's details, including volume name, size, amount of space used, last backup, backup location, and file system type. Backup job history and events are also available, including agent information.
- Verify backup integrity – When you create a backup job for local or remote servers and desktops, you can specify that the resulting backup image file be verified for integrity.
- Link to Symantec pcAnywhere™ directly from the console - Resolve problems and recover files and folders on remote servers and desktops from any remote location. LiveState Recovery Manager includes a license for installing one pcAnywhere host and client. (pcAnywhere must be installed on the same computer where the console is installed. Refer to Symantec pcAnywhere documentation for installation instructions and how to use the product.)
- Link to a Network Attached Storage interface directly from the console – Configure archive space (for SNAP appliances only). Snap Server Manager must be installed.
- Add shortcuts to the Tools view – Use the LiveState Recovery Manager console to add links (or shortcuts) to external programs, URLs, or files that are outside of the console.

Best practices for backup protection

The following list represents some best practices for creating full backups. You should implement this list whenever possible.

- Before a backup
- During a backup
- After a backup

Before a backup

The following strategies can help ensure successful full backups:

- Simplify recovery and reduce the time it takes to create backup images.
  Where possible, separate the boot/operating system from the business data. Put the boot/operating system and the data on their own respective volumes. This separation speeds the creation of backup image files and narrows what needs to be restored.
- Backing up computers in different time zones.
  When you are using the console to back up computers that exist across one or more time zones, the backup will run on the day and local time where the computer is physically located.
- Run Windows Disk Defragmenter and chkdsk utilities before *full* backups.

During a backup

Symantec LiveState Recovery Manager greatly simplifies the creation of backups. To take advantage of this, consider the following strategies:

- Create backup images often and regularly.
  Use the Create Backup Job Wizard to schedule the consistent creation of backup images.
- Save backup images to the proper location.
  This product supports saving backup image files to a network hard disk or to a local hard disk (including USB, FireWire, REV, Zip, and Jaz drives, and magneto-optical). It does not support saving backup image files directly to a tape drive. To save backups to tape, save the backup to another drive, and then use your existing tape backup strategy to save the backup image file to tape.

After a backup

The following strategies can help you successfully manage backups once they are created:

- Maintain duplicate backup images for safety.
  Store backup images elsewhere on the network and create CDs, DVDs, or tapes of the backup images for storage off-site in a safe and secure place.
- Verify that the backup image file or set of files is stable and usable.
  Document and test your entire restore process by doing regular restores of backup image files (using the LiveState Recovery console) and single files

(using the Backup Image Browser in LiveState Recovery). Doing so can uncover potential hardware or software problems.

Use Verify backup image at the time you create a backup image file.

- Consolidate incremental backup images.

  Combine incremental backups to reduce the number of files you have to maintain. This strategy also uses hard disk space more efficiently.

- Review the Events tab.

  Periodically review the contents found in the Events tab to ensure stability in the computer system. In the Assets view of the console, click **Computers** in the left pane, then select a computer in the right pane. The Events tab is displayed in the lower-right pane.

- Review the contents of backup image files.

  Ensure that you are backing up essential data by periodically reviewing the contents of backup image files using Backup Image Browser in LiveState Recovery.

Where to find more information

This product's documentation includes online Help, a Readme file, and the Implementation Guide.

In addition to the product documentation, check the Symantec Web site and the Knowledge Base for answers to frequently asked questions, troubleshooting tips, online tutorials, and the latest product information. On the Internet, go to:

www.symantec.com/techsupp/

You should also have one or more of the following documentation resources already available:

- Implementation Guide (userguide.pdf) and Readme file (readme.txt) on the Symantec LiveState Recovery Advanced/Standard Server Edition CD.
- User's Guide (userguide.pdf) and Readme file (readme.txt) on the Symantec LiveState Recovery Desktop Edition CD.

Note: Viewing the online manuals in PDF format requires Acrobat Reader 5.1 or later.

Chapter 2

Installing Symantec LiveState Recovery Manager

This chapter includes the following topics:

- Preparing for installation
- Installing the product
- Post-installation tasks
- Uninstalling the product

Preparing for installation

Installation procedures might vary, depending on your work environment and and how you want to install the Symantec LiveState Recovery Manager console and server. You can install the Symantec LiveState Recovery Manager console and server on the same computer, or customize the installation by installing the console and server on separate computers. (You can have multiple installations of the console.)

Before you install the product, make sure your computer meets the system requirements. Review the Readme file on the installation CD for any known issues.

Note: Installation of the product is not supported on encrypted file systems.

System requirements for the product

To install and use this product, your computer must meet the minimum requirements described in Table 2-1.

Table 2-1 Minimum system requirements

Component	Requirements
Processor	Pentium 3 - 1 GHz or higher (Pentium 4 - 1.8 GHz or higher recommended)
Operating System	See Table 2-2, "Supported operating systems for console and server installations," on page 20.
RAM	■ Server – 1 GB ■ Console – Dependent on the operating system
Hard Disk Free Space	■ Server – 2 GB (4 GB recommended) ■ Console – 250 MB ■ Microsoft .NET Framework 1.1 – 110 MB of hard disk space required on the server, 40 MB additional hard disk space required for installation program (150 MB total), if not already installed. Requires Internet Explorer 5.5 or greater. ■ Storage space on the network for the backup images
Software	When you install the console, the wizard checks for an installation of Microsoft .NET Framework 1.1. If .NET Framework does not exist, it will automatically be installed. The .NET Framework is a required component to run the product.

Supported operating systems

Table 2-2 describes the Windows operating systems that are supported by the Symantec LiveState Recovery Manager console and server installations.

Table 2-2 Supported operating systems for console and server installations

Windows operating system	Console	Server
Server 2003	X	X
Small Business Server 2003	X	X
2000 Advanced Server (SP4 or later)	X	X
2000 Server (SP4 or later)	X	X
2000 Small Business Server (SP4 or later)	X	X

Table 2-2 Supported operating systems for console and server installations

Windows operating system	Console	Server
XP Professional (SP1 or later)	X	
2000 Professional (SP2 or later)	X	

Note: The Symantec LiveState Recovery Manager software and documentation is in English.

Symantec has verified that you can deploy and remotely configure Symantec LiveState Recovery on English, French, and German servers and desktops.

There are no known limitations that prevent you from using the product to deploy and remotely configure servers and desktops in other languages (excluding double-byte character languages). However, language environment support is limited to internationalization issues found on English, French, and German operating systems.

System requirements for installation packages

Installation packages of Symantec LiveState Recovery that you create using the product can be installed on a variety of Windows operating systems.

The specific hardware requirements for installation packages vary depending on the package contents (full product or agent only). Refer to Symantec LiveState Recovery product documentation for complete requirements.

This product supports up to 2,500 installations of Symantec LiveState Recovery. However, because network performance varies greatly among organizations, the total number of supported installations of Symantec LiveState Recovery may be more or less. Network performance should be monitored to ensure that installations of Symantec LiveState Recovery are not extended beyond the capacity and capability of your network.

This product ships with three pre-built installation packages for the following products:

- Symantec LiveState™ Recovery 3.02 Advanced Server - agent only
- Symantec LiveState™ Recovery 3.02 Standard Server - agent only
- Symantec LiveState™ Recovery 3.02 Desktop - agent only

However, if you want to create installation packages of the *full product*, you need access to one or more of the above product CDs, depending on the package you are creating.

See "Creating install packages" on page 40 for more information.

Symantec LiveState Recovery Advanced/Standard Server

Table 2-3 describes the supported installation packages of Symantec LiveState Recovery Advanced/Standard Server 3.02 on Windows operating systems.

Table 2-3 Supported installation packages on Windows operation systems

Windows operating system	Full product	Agent only
Server 2003	X	X
Small Business Server 2003	X	X
2000 Advanced Server (SP2 or later)	X	X
2000 Server (SP2 or later)	X	X
2000 Small Business Server	X	X
NT 4 Server (SP6a) with Internet Explorer 5.5 or later		X

Symantec LiveState Recovery Desktop

Table 2-2 describes the supported installation packages of Symantec LiveState Recovery Desktop 3.02 on Windows operating systems.

Table 2-4 Supported installation packages on Windows operation systems

Windows operating system	Full product	Agent only
XP Professional (SP1 or later)	X	X
XP Home (SP1 or later)	X	X
2000 Professional (SP2 or later)	X	X

Integration with Symantec iCommand 3.0

If you already have Symantec iCommand 3.0 installed, you should install the Symantec LiveState Recovery Manager server on the same computer. Doing so will allow you to take advantage of existing iCommand 3.0-based technologies on the same host server and database structure.

If you do not have iCommand 3.0 installed, you can install the Symantec LiveState Recovery Manager server on a supported Windows server.

Compatibility and integration with Symantec LiveState unified architecture

Table 2-5 identifies the current and future compatibility and integration with Symantec's LiveState unified architecture.

Table 2-5 Compatibility and integration

Symantec LiveState Recovery Manager version	LiveState architecture version	Compatible and integrated?
3.0	iCommand 3.0	Yes
3.0	iCommand 1.x-2.x	No

User rights requirements

Users on Windows NT/2000/2003 Server/XP must have administrator rights to install and use Symantec LiveState Recovery Manager, or to deploy and install installation packages of Symantec LiveState Recovery.

Installing the product

The Symantec LiveState Recovery Manager installation program checks for the required software and hardware resources, lets you select the installation folder, updates registry settings, and copies the required files to the hard disk. The console installation program also checks for Windows .NET Framework 1.1. If .NET 1.1 is not installed, the installation program installs it.

See "Installing the Symantec LiveState Recovery Manager server" on page 23.

See "Installing the Symantec LiveState Recovery Manager console" on page 25.

Note: Because the console uses data it receives from the server to populate the user interface, it is generally recommended that you install the Symantec LiveState Recovery Manager server first, and then install instances of the Symantec LiveState Recovery Manager console where you want in your enterprise.

Installing the Symantec LiveState Recovery Manager server

Before you begin, make sure you have carefully reviewed the requirements for installing the Symantec LiveState Recovery Manager server.

See "System requirements for the product" on page 20.

Note: This product uses Symantec's LiveState unified architecture as its foundation. Therefore, if you have an existing installation of Symantec iCommand 3.0, you should install the server on the same computer. This will allow you to share the existing iCommand database structure, agent architecture, and server architecture.

If you are installing Symantec LiveState Recovery Manager server into a new environment where Symantec iCommand and Symantec LiveState Recovery do not exist, this server installation will create a new database structure to store data about computers and backup tasks.

To install the Symantec LiveState Recovery Manager server

1. Insert the Symantec LiveState Recovery Manager server product CD into the media drive of the computer.
   - If CD auto-run is enabled, the installation program for the console launches automatically.
   - If the CD auto-run is not enabled, click **Start** > **Run**, and then type **drive:\autorun** (where **drive** is the drive letter of your media drive), and then click **OK**.
2. In the Installation Introduction screen, click **Next**.
3. Read the license agreement, click **I accept the terms in the License Agreement**, and then click **Next**.
4. In the Agent User Account panel, do one of the following (the agent user account is used when a remote computer downloads agents or install packages from the Symantec LiveState Recovery Manager server):
   - Click **Use Local Account**. You can use the default account name (smeclnt). Type a password and confirmation password in the text boxes.

     The password requires a minimum of three characters and it must meet the password criteria where the account is being created. There is no password validation done.

     Click **Next**.
   - Click **Use Domain Account**. Select a domain from the drop-list where where an account has already been created. Type the password, and the confirmation password.

     The password requires a minimum of three characters and it must meet the password criteria of the domain where the account has been created. There is no password validation done.

     Click **Next**.

5 In the Server Administrator Account panel, type the password and confirmation password to the server. The password must contain 3-60 characters using uppercase and lowercase alpha characters, or numerics 0-9, or a combination of both. No special characters are permitted.
This password is used to access the server when you log on to the console.

Note: You will not be able to access the server via the console if you do not enter the correct password, or you forget the password. (In such cases, you must uninstall, then reinstall the software.) Store the password in a secure place; Symantec has no method for restoring a password to the server.

6 In the Select Installation Folder panel, do one of the following:

- To install Symantec LiveState Recovery Manager server in the default folder path, click **Next**.
- To change the installation folder, click **Choose**, locate the folder where you want to install the server, and then click **Select**. Then, in the Select Installation Folder panel, click **Next**.
- To reinsert the default folder path, click **Restore Default Folder**, and then click **Next**.

7 In the Ready to Install panel, review the install path, and then click **Install** to begin installing the Symantec LiveState Recovery Manager server.

Installing the Symantec LiveState Recovery Manager console

Before you begin, make sure you have carefully reviewed the requirements for installing the Symantec LiveState Recovery Manager console.

See "System requirements for the product" on page 20.

You can install the console anywhere in your enterprise where you will need access to the Symantec LiveState Recovery Manager server and database.

To install the Symantec LiveState Recovery Manager console

1 Insert the Symantec LiveState Recovery Manager console product CD into the media drive of the computer.

- If CD auto-run is enabled, the installation program for the console launches automatically.
- If the CD auto-run is not enabled, click **Start** > **Run**, then type **drive:\autorun** (where **drive** is the drive letter of your media drive), and then click **OK**.

2 In the Installation Introduction panel, click **Next**.

3. Read the license agreement, click **I accept the terms in the License Agreement**, and then click **Next**.
4. In the Select Installation Folder panel, do one of the following:
   - To install Symantec LiveState Recovery Manager console in the default folder path, click **Next**.
   - To change the installation folder, click **Choose**, locate the folder where you want to install the console, and then click **Select**. Then, in the Select Installation Folder panel, click **Next**.
   - To reinsert the default folder path, click **Restore Default Folder**, and then click **Next**.
5. In the Select Locations for Program Shortcuts panel, deselect the locations where you do not want to place a program shortcut (the Desktop and Start Menu program shortcut locations are selected by default.), and then click **Next**.
6. Review the summary information, and then click **Install** to begin installing the Symantec LiveState Recovery Manager Console.
7. When the installation is complete, click **Done** to exit the installation wizard.

Post-installation tasks

After you install the product, you can modify certain installation settings or perform a task that you might have skipped during the installation process.

You can perform the following post-installation tasks:

- Starting the console
- Keeping current with LiveUpdate

Starting the console

If you accepted the default program shortcuts locations at the time of installing the Symantec LiveState Recovery Manager console, you can start the console from the Windows taskbar or from the Windows desktop.

To start the console

- Do one of the following:
  - On the classic Windows taskbar, click **Start** > **Programs** > **Symantec** > **LiveState Recovery** > **LiveState Recover Manager**.

- On the Windows XP taskbar, click **Start** > **All Programs** > **Symantec** > **LiveState Recovery** > **LiveState Recover Manager**.
- On the Windows desktop, double-click the Symantec LiveState Recovery Manager icon.

After the console is started, you need to log on by specifying the computer name or IP address of the server, and typing the password you specified during the installation of the Symantec LiveState Recovery Manager server.

Keeping current with LiveUpdate

Using your Internet connection, you can receive software updates associated with your version of the product. When you run LiveUpdate, you connect to the Symantec LiveUpdate server and select the product updates that you want to install.

Updating the product

Run LiveUpdate as soon as you have installed the product. Once you know that your files are up-to-date, run LiveUpdate periodically to obtain program updates.

To obtain updates using LiveUpdate

1. On the Help menu, click **LiveUpdate**.
2. In the LiveUpdate window, click **Next** to locate updates.
3. If updates are available, click **Next** to download and install them.
4. When the installation is complete, click **Finish**.
   Some program updates may require that you reboot your computer before the changes will take effect.

Uninstalling the product

You can uninstall Symantec LiveState Recovery Manager console, server, or both. The uninstallation program removes the files and registry settings that it copied to the computer's hard disk during installation.

You uninstall the product using the Add or Remove Programs option in the Windows Control Panel. Once the removal process begins, you cannot cancel it.

Symantec LiveState Recovery Manager automatically deletes product files, including program shortcuts on the desktop and Windows Start menu (if you are uninstalling the console).

See "Uninstalling the Symantec LiveState Recovery Manager console" on page 28.

See "Uninstalling the Symantec LiveState Recovery Manager server" on page 29.

Note: If you are uninstalling the Symantec LiveState Recovery Manager server, be aware that it will not uninstall Symantec LiveState Recovery or LiveState Agent from any computers that you have added to the console. To uninstall Symantec LiveState Recovery and its associated agents from computers, you should remove the computers from the console *before* you uninstall the Symantec LiveState Recovery Manager server. See "Removing managed computers" on page 47.

Uninstalling the Symantec LiveState Recovery Manager console

When you uninstall the Symantec LiveState Recovery Manager console, product files are automatically deleted, including program shortcuts on the desktop and Windows Start menu.

If you do not uninstall the Symantec LiveState Recovery Manager server, any computers, computer groups, backup jobs, or backup job categories that you have added to the console will remain in the Symantec LiveState Recovery Manager database. If you decide to reinstall the console later, the computers, groups, and backup jobs in the database will re-populate the console interface.

To uninstall the Symantec LiveState Recovery Manager console

1. On the Windows taskbar, click **Start** > **Settings** > **Control Panel**.
2. In the Control Panel window, double-click **Add or Remove Programs**.
3. In the **Add or Remove Programs** window, click **Symantec LiveState Recovery Manager 3.0**.
4. Click **Change/Remove**.
5. In the Uninstall Symantec LiveState Recovery Manager 3.0 window, click **Uninstall**.
6. Click **Done** to exit the wizard.
   Restart your computer if prompted to do so. This step is necessary to ensure that all components are properly removed.

Uninstalling the Symantec LiveState Recovery Manager server

If you are uninstalling the Symantec LiveState Recovery Manager server, be aware that it will not uninstall Symantec LiveState Recovery from any computers that you have added to the console. To uninstall Symantec LiveState Recovery and its associated agents from computers, you should first remove the computers from the console before you uninstall the Symantec LiveState Recovery Manager server.

See “Remove Managed Computers” in Chapter 3, QuickStart.

To uninstall the Symantec LiveState Recovery Manager server

1. On the Windows taskbar, click **Start** > **Settings** > **Control Panel**.
2. In the Control Panel window, double-click **Add or Remove Programs**.
3. In the **Add or Remove Programs** window, click Symantec LiveState Recovery Manager 3.0 Server.
4. Click **Change/Remove**.
5. In the Uninstall Symantec LiveState Recovery Manager 3.0 Server window, click **Uninstall**.
6. Click **Done** to exit the wizard.
   Restart your computer if prompted to do so. This step is necessary to ensure that all components are properly removed.

Chapter 2

QuickStart

This chapter includes the following topics:

- Using the console
- Integrating computers into the console
- Creating install packages
- Discovering computers
- Adding unmanaged computers
- Deploying install packages
- Organizing groups of computers
- Where to go from here

Using the console

If you are new to Symantec LiveState Recovery Manager, you may find it helpful to first review this information before integrating computers into the console and deploying backup jobs.

The console lets you create and deploy backup jobs from your workstation, and manage and view the complete status of those backup jobs on all computers.

Using the console, you can connect to the agents on any number of computers in a network domain or workgroup that already have the agent installed.

Starting the console

You can start the console from the Windows start menu or from the Windows desktop.

After the console is opened, you need to log on to the console to complete tasks.

To start the console

- Do one of the following:
  - On the classic Windows taskbar, click **Start** > **Programs** > **Symantec** > **LiveState Recovery** > **LiveState Recover Manager**.
  - On the Windows XP taskbar, click **Start** > **All Programs** > **Symantec** > **LiveState Recovery** > **LiveState Recover Manager**.
  - On the Windows desktop, double-click the Symantec LiveState Recovery Manager 3.0 Console icon.

Logging on to the server through the console

During the installation of the Symantec LiveState Recovery Manager server, you had to specify a server administrator account password. After you start the console, you must specify this case-sensitive password to access the server through the console's interface.

To log on to the server through the console

1. On the File menu of the Symantec LiveState Recovery Manager console, click **Log on**.
2. In the Log on dialog box, type the computer name or IP address of the server.
3. Type the password to the console.
4. Click **OK**.

Logging off from the server

When you log off from the console, the starting console view will remain open until you exit the program or until you log on to the console again. Any backup jobs you have deployed to computers will continue to function as usual.

You can also log off from the console by exiting the program.

To log off from the server

1. On the File menu of the Symantec LiveState Recovery Manager console, do one of the following:
   - Click **Log off** to log off from the server and have the console remain open.
   - Click **Exit** to log off from the server and close the console.
2. Click **OK**.

Changing the agent user account password

If policies at your site require that you change all passwords on a regular basis, you may need to change the password for the agent user account. When you installed Symantec LiveState Recovery Manager server, the setup program stored the agent user account name and password in a local account or a domain account and in the operating system where the server is installed. The password in both locations must be identical. Therefore, if you change it in one location, you must also change it at the other location. If the two passwords are not identical it could result in a distribution error as displayed in the console.

Computers that you are managing with the product have agent user accounts and passwords automatically assigned to them by the LiveState Agent. When you change the agent user account password, the LiveState Agent reads the new password from the server's smelogin file and automatically assigns it to all the computers you are managing from the console; you do not need to manually change the agent user account password on each remote computer.

To change the password in the operating system and the Symantec LiveState Recovery Manager server, complete the following steps.

To change the agent user account password

1. On the Windows taskbar of the server where Symantec LiveState Recovery Manager server is installed, click **Start** > **Settings** > **Control Panel** > **Administrative Tools** > **Computer Management**.
2. In the left pane, double-click **Local Users and Groups** to expand the tree.
3. Click the **Users** folder to display a list of user accounts in the right pane.
4. Select the agent user account you created when you installed Symantec LiveState Recovery Manager server.
5. On the Action menu, click **Set Password**, then follow the on-screen instructions provided by Windows.
   You will now change the password on the Symantec LiveState Recovery Manager server.
6. On the server where Symantec LiveState Recovery Manager server is installed, open ccm_pw.exe (default location is C:\Symantec\LiveState\Config\dbin).
7. In the User drop-down list, select a user.
8. In the Server text box, specify the path to the Symantec LiveState Recovery Manager server.
9. Type the old password.
10. Retype the new password to confirm it.

11 Click **OK**.

Changing the console password

You can change the log on password to the console after you have logged on. Passwords are case-sensitive.

Note: You will not be able to access the server by way of the console if you do not enter the correct password, or you forget the password. (In such cases, you must uninstall, then reinstall the software.) Store the password in a secure place; Symantec has no method for restoring a password to the server.

To change the console password

1 Make sure you are already logged on to the console.

2 On the Tools menu, click **Change Password**.

3 Type the password you want to change in the **Old Password** text box.

4 Type the new password in the **New Password** and **Confirm New Password** text boxes.

5 Click **OK**.

Console views

The console consists of five main views: Quick Start, Home Page, Assets, Incidents, and Tools.

Quick Start view

The Quick Start view, available as a tab next to the Home Page tab in the main window, is the default starting view when you first log on to the product. It is the best place to start if you are new to Symantec LiveState Recovery Manager.

The Quick Start view helps you get started using the console by listing tasks to complete in a recommended order.

Once you become familiar with using the console and navigating the different views, you can turn off the opening QuickStart view by clicking **Don't show this page after log on** at the bottom of the page. The next time you log on to the console, the Home Page becomes the default view.

Home Page view

The Home Page view, available as a tab next to the QuickStart tab in the main window, provides a visual overall status of servers and desktops that are being protected. Actual data regarding computer incidents will populate this view when you have added computers to the console and assigned backup jobs to those computers.

Table 2-1 describes the information available from the Home Page view.

Table 2-1 Home Page view information

Status type	Description
Quick Status	Displays servers and desktops status You can click a hyperlink in this area to open the Incidents view and get detailed information about a selected computer in the table. This is especially useful for troubleshooting purposes. Quick Status types include: ■ Failed backups – Displays the number of desktops and servers that have failed backups out of the total number of desktops and servers you are managing. ■ Disconnected computers – Displays the number of managed desktops and servers that are disconnected out of the total number of desktops and servers you are managing. See Server Status below for an explanation of disconnected computers. ■ Successfully backing up – Displays the number of desktops and servers that have scheduled backup jobs being run successfully out of the total number of desktops and servers you are managing. See “Monitoring computers” on page 71. See “Incidents view” on page 22.

Table 2-1 Home Page view information

Status type	Description
Server Status and Desktop Status pie charts	Displays a pie chart showing the proportions of certain status types for all recovery-enabled servers and desktops. A computer is considered recovery-enabled if is has Symantec LiveState Recovery and LiveState Agent installed on it. Status types include: ■ Successfully Backing Up – Number of recovery-enabled computers that are successfully being backed up by an assigned backup job with a schedule. ■ No Backup Jobs Scheduled – Number of managed computers that have no backup jobs assigned to them. ■ Unlicensed – Number of managed computers that do not have a Symantec LiveState Recovery license file installed or have an expired license file. ■ Incidents – Number of managed computers that have backup failures, distribution errors, disconnected status, or multiple issues (computers that have one or more problems). See "Incidents view" on page 22.
Symantec LiveState Recovery Errors	Displays the number of computers that have had Symantec LiveState Recovery events over the past seven days. You can click a bar to the right of a date to jump to the Incidents view for a more detailed review of event and status information. See "Incidents view" on page 22.
Quick Links	Provides hyperlinks to commonly used tasks like: ■ Getting information about LiveState on the Symantec Web site. ■ Discovering computers you want to add to the console. See "Discovering computers" on page 27. ■ Deploying backup jobs to computers you are managing. See "Assigning backup jobs" on page 67. ■ Running LiveUpdate. See "Updating Symantec LiveState Recovery Manager" on page 23. ■ Requesting updated information on a remote computer. See "Request updated client information" on page 75. ■ Logging off from the console/server. See "Logging off from the server" on page 16.

Making the Home Page view the default

You can make the Home Page view the default view when you log on to the console. The next time you log on to the console, the Home Page replaces the Quick Start at the default view.

To make the Home Page view the default

1. In the console, click the QuickStart tab.
2. Select **Don't show this page after log on** at the bottom of the QuickStart page.

Assets view

The Assets view, available as a button in the left pane of the console, is used to display all the computers that are currently being managed or not managed by the server.

From the Assets view you can:

- Use the Discover Computers feature to scan a specified network domain or workgroup. When the scan is complete, the console will list all visible (turned on) unmanaged computers in an entire network, domain, workgroup, or IP address range. A computer is considered managed if it has the LiveState Agent installed on it. If a computer has Symantec LiveState Recovery and the LiveState Agent installed, it is considered recovery-enabled.
- Add computers to the console from the Discover Computers list that you want to manage and protect.
- View a computer's drive details (like the drive's used and free space, last backup, and last backup location), backup history, or event details to verify that Symantec LiveState Recovery is functioning properly.
- Deploy install packages of Symantec LiveState Recovery to computers you have added to the console.
- Create a custom group of computers with a specific name for easier management. This new group is added to the Computer Groups tree.
- Create backup job categories to organize frequently used backup jobs. For example, you can create a "Daily" backup job category that can represent various required or mandatory backup schedules that have been approved for particular computers in your organization.
- Install license files to activate deployed installations of Symantec LiveState Recovery on computers.

Incidents view

You can use the Incidents view to get information on the health of a selected computer in the network domain or workgroup that you have added to the console. The Incidents view, available as a button in the left pane of the console, is used to alternately display:

- Computers with failed backup jobs – Number of managed server and desktop computers that have backup failures.
  Backup failures can be caused by running out of hard disk space at the backup storage location, or the backup job is unable to connect to the specified backup storage location (usually a non-local storage location).
- Disconnected computers – Number of managed server and desktop computers that are disconnected from the Symantec LiveState Recovery Manager server.
  A computer is considered disconnected if the remote computer has a backup job assigned and the server has not heard from the computer at the next scheduled backup time. This is often caused by network connectivity issues like the computer or laptop not being connected to the network or simply being turned off.
- Computers with distribution errors – Number of managed server and desktop computers with distribution errors.
  Distribution errors include situations where an install package or a backup job is deployed, but the remote computer is unable to receive the package or job.

The hyperlinks in the Quick Status area of the Home Page are linked to the Incidents view to help you with troubleshooting.

Tools view

You can use the Tools view in the Symantec LiveState Recovery Manager console to add links (or shortcuts) to external programs, URLs, or files that are outside of the console.

When you install the console, default program shortcut icons for Symantec pcAnywhere and Snap Server Manager are automatically added to the Tools view. These program shortcuts are active if you have Symantec pcAnywhere or Snap Server Manager installed on the same computer as the console.

See "Using the Tools view" on page 83.

Changing server options

You can customize certain aspects of the Symantec LiveState Recovery Manager console and server to suit your working environment. Changes to options remain in effect (even if you exit Symantec LiveState Recovery Manager) until you change them again.

See "Ports that must be open in a firewall" on page 79.

To change server options

1. On the Tools menu, click **Options**.
2. In the Options dialog box, specify the following

Secure server port	Used to communicate to Web services by way of https.
Unsecure server port	Used to communicate to Web services by way of http.
Session timeout in minutes	Specifies the number of minutes of inactivity before the current session prompts you to either log back on to the server or remain logged off.

Updating Symantec LiveState Recovery Manager

You can receive software updates associated with your version of Symantec LiveState Recovery Manager console by connecting to the Symantec LiveUpdate server and selecting the updates that you want to install.

To obtain updates using LiveUpdate

1. On the Help menu in Symantec LiveState Recovery Manager, click **LiveUpdate**.
2. In the LiveUpdate window, click **Next** to locate updates.
3. If updates are available, click **Next** to download and install them.
4. When the installation is complete, click **Finish**.
   Some program updates may require that you reboot your computer before the changes will take effect.

Integrating computers into the console

Before you can begin to backup computers on a network, the computers must first be integrated into the Symantec LiveState Recovery Manager database through the console. Integrating computers is a multi-step process that begins before you add computers to the Symantec LiveState Recovery Manager server,

and ends when you have deployed install packages of Symantec LiveState Recovery to those computers you have added.

To integrate computers into the Symantec LiveState Recovery Manager console, do the following:

- Optionally create install packages of Symantec LiveState Recovery. See “Creating install packages” on page 24.
- Discover and identify computers in a domain or workgroup that you want to protect. See “Discovering computers” on page 27.
- Add the discovered computers to the console. See “Adding unmanaged computers” on page 30.
- Deploy the appropriate install package of Symantec LiveState Recovery to the computers you added to the console. See “Deploying install packages” on page 32.

After you have integrated computers into the console, you can create and deploy backup jobs to those computers. See “Creating backup jobs” on page 60.

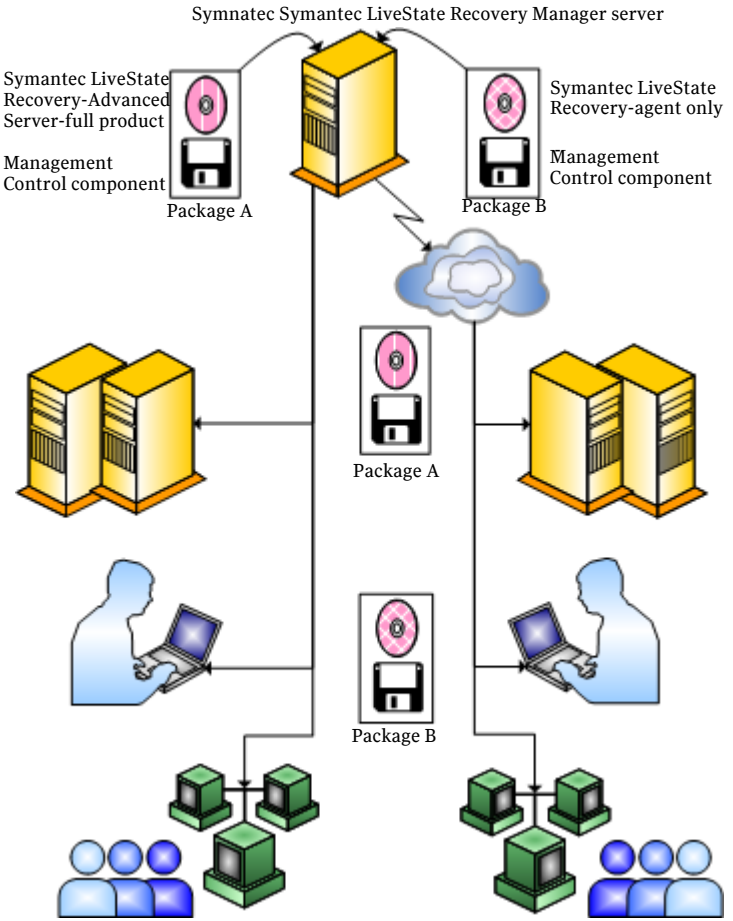
Creating install packages

Symantec LiveState Recovery Manager does not include “install packages” for deploying the full Symantec LiveState Recovery product to computers. If you want to deploy the full Symantec LiveState Recovery product, you must first create install packages using the Create/Update LiveState Recovery Files wizard and the Symantec LiveState Recovery product CD.

Note: Symantec LiveState Recovery Manager ships with three pre-built install packages of Symantec LiveState Recovery (agent only) for the Advanced Server, Standard Server, and Desktop versions. Unless you intend to install full versions of Symantec LiveState Recovery on computers, there is no need to create install packages of Symantec LiveState Recovery. In which case, you can proceed to “Discovering computers” on page 27.

An install package is a single installation that contains the Management Control component and either the Symantec LiveState Recovery agent or the full Symantec LiveState Recovery product. Install packages are stored on the

Symantec LiveState Recovery Manager server. You can deploy install packages at any time to computers you have added to the console.



Typically, you create install packages only once and use them until a new or updated version of Symantec LiveState Recovery is released. At that time, you simply run the wizard again to update the appropriate packages on the Symantec LiveState Recovery Manager server.

You can create up to six different install packages, depending on the Symantec LiveState Recovery products you are licensed to use. You can create:

- Agent-only install packages for Symantec LiveState Recovery Advanced Server, Standard Server, and Desktop versions. (This is only necessary if you need to create agent-only install packages for a newer version of Symantec LiveState Recovery.)
- Full product install packages for Symantec LiveState Recovery Advanced Server, Standard Server, and Desktop versions.

Whether you deploy an install package that includes just the agent or the full product, either package permits you to manage the computers through the Symantec LiveState Recovery Manager console.

Table 2-2 describes the two types of files you can copy into an install package.

Table 2-2 Files to copy

Files to copy	Description
Agent	The agent is the unseen engine that does the actual creating and restoring of backup images on a computer. Because the agent functions as a service, it does not have a graphical user interface. The agent does, however, have a tray icon available from the Windows system tray to provide feedback of current conditions and to perform common tasks. For example, using the tray icon on the computer, a user would be able to view assigned backup jobs, reconnect the agent, or cancel a task that is currently running.
Full product	If you select to copy the full product, it will include the agent as described above and the Symantec LiveState Recovery graphical user interface.

To create install packages

1. Depending on the install package you want to create, make sure you have one or more of the following products CDs available before you continue.
   - Symantec LiveState Recovery Advanced Server 3.02
   - Symantec LiveState Recovery Standard Server 3.02
   - Symantec LiveState Recovery Desktop 3.02
2. On the Tools menu, click **Create/Update LiveState Recovery Files**, then click **Next**.
3. Select the products whose install packages you want to create (or update) based on the product CDs you have available, then click **Next**.
4. Click **From product CD**.

5 Insert the appropriate product CD into the media drive when prompted, then click **Next**.

The install browser window may appear after you insert the CD. In such cases, click **Exit** to return to the wizard.

6 Select the files you want to copy into the install package, then click **Next** to begin copying the files from the product CD and placing the install packages on the Symantec LiveState Recovery Manager server.

If you selected more than one product near the start of the wizard, you will be prompted to insert the next product CD.

You are now ready to discover unmanaged computers in preparation for adding them to the console. See "Discovering computers" on page 27.

Discovering computers

You can use Discover Computers to discover and identify multiple unmanaged computers in a domain or workgroup that you want to manage from the Symantec LiveState Recovery Manager console. Discovered computers are considered "unmanaged" computers because they have not yet been added to the database of Symantec LiveState Recovery Manager.

Note: Discovering unmanaged computers is a necessary step before you can add multiple computers to the console at the same time or deploy install packages to them. If you are adding just a few computers, you do not need to discover computers. Instead, you can add computers directly using a comma to separate each specified entry. See "Adding unmanaged computers" on page 30.

After computers are discovered, the results are displayed in columns in the right pane of the Assets view. You can select a computer to view its displayed information in the bottom pane for easier reading.

Besides discovering unmanaged computers, you can use Discover Computers to identify computers that have Symantec LiveState Recovery already installed on them. Such computers are known as "managed" computers. See "Discovering computers with LiveState Recovery components" on page 29.

Table 2-3 lists the information that is displayed about discovered computers.

Table 2-3 Discovered computer information

Column heading	Description
Name	View the name of each running (turned on) computer found in the domain or workgroup.
Domain	View the name of the domain where the computer resides on the network.
Provider	View the general type of network operating system that the computer resides on.
Comment	View a computer description if one was added in the Windows Computer Name tab.
Status	View the state of the computer.
LiveState Recovery Version	View the version of Symantec LiveState Recovery that is installed on the computer. If you have not added the computer to the console or installed Symantec LiveState Recovery, this will appear as “Unknown Version.”
Management Console Version	View the version of the Management Console agent that is installed on the computer. If you have not added the computer to the console, this will appear as “Unknown Version.”

Note: Before you continue, have you created install packages? See “Creating install packages” on page 24.

Discovering unmanaged computers

Discover Computers lets you select multiple unmanaged computers either by typing the computer names or IP addresses or by browsing for computers across domains.

If you choose to scan for computers across domains, all computers in your Network Neighborhood appear in the browse list regardless of their operating systems. Discover Computers supports only Microsoft 32-bit operating systems (for example, Windows NT/2000/XP). If you select a computer that has another operating system, deployment to that computer will fail.

Note: If you are adding just one computer, you do not need to discover computers. Instead, you can add the computer directly. See "Adding unmanaged computers" on page 30.

To discover unmanaged computers

1. On the View menu, click **Assets**.
2. On the Computers menu, click **Discover Computers**.
3. Do one of the following:
   - Click **Scan entire network**.
     It may take a few moments for the Select Computers dialog box to appear.
   - Click **Domain to scan for computers**, and then select a domain or workgroup from the drop-down list.
   - Click **Scan specific IP address range**, and then type the IP address range you want to scan in the Start and End text boxes.
4. Click **OK**. The results are displayed in the right pane of the console.

You are now ready to add computers to the console. See "Adding unmanaged computers" on page 30.

Discovering computers with LiveState Recovery components

Besides discovering unmanaged computers, you can discover computers that already have Symantec LiveState Recovery installed on them.

For example, prior to installing Symantec LiveState Recovery Manager you may already have existing installations of Symantec LiveState Recovery on computers throughout your enterprise. If so, you can use Symantec LiveState Recovery Manager to search for those computers and add them to the console for unified management of backups and backup schedules.

To discover computers with Symantec LiveState Recovery components

1. On the Computers menu, click **Discover Computers**.

2 Click **Domain to scan for computers**, then select a domain or workgroup from the drop-down list.

3 In the Discover Versions group box, select **Scan for LiveState Recovery and Management Control versions**.

4 Type the domain administrator user name and password to the domain you want to scan.

5 Click **OK**. The results are displayed in the right pane of the console.

Adding unmanaged computers

You can use Add Computers to integrate one computer or multiple discovered computers into the Symantec LiveState Recovery Manager console.

See "Discovering computers" on page 27 if you need to discover multiple computers.

When you add one or more computers to the console,

- It becomes recognized by Symantec LiveState Recovery Manager as a computer that can accept install packages of Symantec LiveState Recovery.
- It appears in the Managed Computers tree of the Assets view.
- You must have an administrator user name and password for the computers you want to add, and the administrator user name and password must be the same for all unmanaged computers you are adding at one time.
  The easiest way to accomplish this is for all unmanaged computers to be in the same domain, and for you to use a domain administrator user name and password for authentication.
- An administrator share must be enabled on the unmanaged computers you are adding. The default share is C$.
- It automatically deploys and installs the Symantec LiveState Agent for Windows (Windows agent) to the selected computer and reboots.

The LiveState Agent resides on the managed computers. It is used by the Symantec LiveState Recovery Manager server to poll for backup jobs that need to be downloaded, and reports status information back to the console.

When the LiveState Agent is deployed to the computers you are adding to the console, the computers are automatically rebooted. Following reboot, a "traffic light" icon appears in the Windows system tray of each computer.
See "Components of Symantec LiveState Recovery Manager" on page 7.

To add unmanaged computers

1. On the View menu, click **Assets**.
2. Click **Unmanaged Computers** in the left pane.
3. In the right pane of the console, select the computers you want to add to the Managed Computers tree of the Assets view.
   No computers appear in the right pane of the console? You may need to first discover computers. See "Discovering computers" on page 27.
4. On the Computers menu, click **Add Computer**.
5. Do one of the following:
   - If you are adding multiple computers, type the domain administrator name and password to the domain.
   - If you are adding one computer, you can type either the domain administrator name or the administrator name, and the password.
6. Click **OK**.

Removing managed computers

Use Remove Computers to delete selected computers from the Managed Computers tree in the Assets view and the Symantec LiveState Recovery Manager database. When a managed computer is removed, the following components are uninstalled from the remote computer:

- Symantec LiveState Agent (optional).
  If you choose to leave this agent on the remote computer, only its entry in the Symantec LiveState Recovery Manager database is removed and, therefore, will not appear in the Managed Computers list of the console.
  However, if you choose to have the agent removed, it will be uninstalled from the remote computer before its entry is deleted from the Symantec LiveState Recovery Manager database.

The following component remains on the remote computer:

- Management Control component (inactive).
- Microsoft .NET Framework.
- Symantec LiveState Recovery. To uninstall Symantec LiveState Recovery, see "Uninstalling Symantec LiveState Recovery on managed computers" on page 35.

If you are removing multiple computers, they must all reside within the same domain and you must have a domain administrator user name and password to that domain. If you are removing one computer from the console, you can do so by simply using an administrator user name and password.

To remove managed computers

1. On the View menu, click **Assets**.
2. In the left pane, do one of the following:
   - Double-click **Managed Computers** to display a list of computers in the right pane.
   - Double-click **Computer Groups** to display a list of groups, and then click a group.
     See "Organizing groups of computers" on page 36.
3. In the right pane, select the computer names that you want to remove from the console.
4. On the Computers menu, click **Remove Managed Computer**.
5. In the Remove Computer dialog box, select **Remove the agent before deleting the computers** to uninstall the LiveState Agent. This option is selected by default.
6. Do one of the following:
   - If you are removing multiple computers, type the domain administrator name and password to the domain.
   - If you are removing one computer, you can type either the domain administrator name or a local administrator name, and the password.
7. Click **OK**.

Deploying install packages

You can deploy install packages of Symantec LiveState Recovery to computers that you have added to the Symantec LiveState Recovery Manager database.

Management Control, a component that also gets installed when the install package of Symantec LiveState Recovery is deployed to the computer, communicates with the Symantec LiveState Recovery Manager server. This component publishes event information to the console about such things as the drives and volumes on the computer, a list of backup images and their storage locations, and the backup job assigned to it, including the backup and restore history. The console is also notified if the configuration of the computer changes.

When the Symantec LiveState Recovery product is deployed, the computers are automatically rebooted. Following reboot, a Symantec LiveState Recovery tray icon appears in the Windows system tray of each computer.

If Symantec LiveState Recovery already existed on a computer prior to adding it to the Symantec LiveState Recovery Manager console, any backup jobs (including command files) created by a user are deleted.

For each install package of Symantec LiveState Recovery that you deploy onto managed computers, you will also need deploy a license file to activate the software.

See "Activating Symantec LiveState Recovery on managed computers" on page 33.

Note: Before you continue, have you created install packages and added computers to the console? See "Creating install packages" on page 24, or "Adding unmanaged computers" on page 30.

To deploy install packages

1. In the Assets view of the console, do one of the following:
   - Click **Managed Computers** in the left pane to display a list of computers in the right pane.
   - Double-click **Computer Groups** in the left pane to expand the tree.
2. Do one of the following:
   - In the Managed Computers table in the right pane, select one or more computers that have Symantec LiveState Recovery installed, then click **Computers** > **Install/Update LiveState Recovery**.
   - In the Computer Groups tree, select a computer group name. In the Computer Group table in the right pane, select one or more computers that do not have Symantec LiveState Recovery installed, then click **Computers** > **Install/Update LiveState Recovery**.
   - In the Computers Group tree in the left pane, select a computer group, then click **Computers** > **Install LiveState Recovery on Computers in Group**.
3. Click **Yes** to continue.
4. In the LiveState Recovery Type dialog box, click the appropriate install package you want to deploy and install.
5. Click **OK**.

Activating Symantec LiveState Recovery on managed computers

Product activation is a technology that protects users from pirated or counterfeit software by limiting use of a product to those users who have

acquired the product legitimately. Activation of Symantec LiveState Recovery requires the installation of a license file for each install package of Symantec LiveState Recovery that you deploy.

You must activate Symantec LiveState Recovery within 30 days of installation; otherwise the software will stop working. You can activate it after the 30 days have elapsed without redeploying the software.

See "Checking license status of Symantec LiveState Recovery on computers" on page 34.

The 30-day evaluation of Symantec LiveState Recovery (agent or full product) lets you create backup images of system and data volumes. You can also perform restorations of data volumes and files/folders.

You also have open access to Symantec's online technical support library. You can view up-to-date support information, including a searchable knowledge base, software library files, frequently asked questions, customer-to-customer news groups, and additional technical information at the Symantec Support Knowledge Base.

When you purchased Symantec LiveState Recovery (Advanced Server, Standard Server, or Desktop), you should have received a license file (.slf). You will install this license file on computers.

To activate Symantec LiveState Recovery on managed computers

1. In the Assets view of the console, do one of the following:
   - Double-click **Computer Groups** in the left pane, and then select a group. In the right-pane, select a computer in the table.
   - Click **Managed Computers** in the left pane. In the right pane, select a computer in the table.
2. On the Computers menu, click **Install/Update LiveState Recovery License**.
3. In the Install License dialog box, click **Browse** to locate and open the license file.
4. Click **Install**.

Checking license status of Symantec LiveState Recovery on computers

You can use the Assets view to check the license status of Symantec LiveState Recovery on managed computers.

See "Activating Symantec LiveState Recovery on managed computers" on page 33.

To check license status of Symantec LiveState Recovery on computers

1 In the Assets view of the console, click **Managed Computers** in the left pane to display a table of computers in the right pane.

2 Check the License Status column for one of three status messages.

None	A Symantec LiveState Recovery license file has not been installed on the computer.
Product license expires in x days	A Symantec LiveState Recovery license file is installed on the computer and expires in a specified number of days.
Product license has expired	A Symantec LiveState Recovery license file is installed on the computer and is more than 30 day old.

Uninstalling Symantec LiveState Recovery on managed computers

You can uninstall Symantec LiveState Recovery from one or more selected computers, or from all computers in a computer group that you have created. When Symantec LiveState Recovery is uninstalled, the remote computer will automatically be rebooted.

If you want to remove a managed computer from the Symantec LiveState Recovery Manager database and console only, see "Removing managed computers" on page 31.

To uninstall Symantec LiveState Recovery on managed computers

1 In the Assets view of the console, do one of the following:

- Click **Managed Computers** in the left pane to display a list of computers in the right pane.
- Double-click **Computer Groups** in the left pane to expand the tree.

2 Do one of the following:

- In the Managed Computers table in the right pane, select one or more computers that have Symantec LiveState Recovery installed, then click **Computers** > **Uninstall LiveState Recovery**.
- In the Computer Groups tree, select a computer group name. In the Computer Group table in the right pane, select one or more computers that have Symantec LiveState Recovery installed, then click **Computers** > **Uninstall LiveState Recovery**.
- In the Computers Group tree in the left pane, select a computer group, then click **Computers** > **Uninstall LiveState Recovery from Computer Group**.

3 Click **Yes** to continue.

4 Do one of the following:

- Click **Yes** to save backup jobs, backup histories, and command files associated with the remote computer, or if you intend to upgrade or reinstall Symantec LiveState Recovery in the future.
- Click **No** to delete all backup jobs, backup histories, and command files associated with the remote computer.

5 Click **OK**.

Organizing groups of computers

You can organize computers that you have added to the console by creating computer groups. Though it is not a necessary step in integrating computers into the console, grouping computers simplifies the backup management of large numbers of computers. For example, if there are desktop computers that you want to backup just once a month, you can create a group for those computers, regardless of where they reside on the network. You can then assign a monthly backup job for that group.

You can group computers by department, network location, physical location, backup schedules, or any other grouping criteria you establish, and then assign one or more backup jobs to that group. This saves you time by not having to create a backup job for each computer in the console.

Note: Make sure that any backup jobs you assign to a computer or computer group do not overlap in time; otherwise a backup error will occur. Also, only one incremental backup job per volume can be assigned on a remote computer. If you assign a second incremental backup job to the same volume, a backup error will occur.

You can create any number of groups for computers that are added to the console, and you can add computers to one or more groups.

Computer groups cannot be nested within other computer groups.

See "Adding unmanaged computers" on page 30.

You can organize groups of computers in the following ways:

- Add computer groups to the console.
  See "Adding computer groups" on page 37.
- Edit a computer group name and description.
  See "Editing computer groups" on page 37.

- Remove computer groups from the console.
  See "Deleting computer groups" on page 38.
- Add computers to computer groups.
  See "Adding computers to a group" on page 38.
- Remove computers from a computer group.
  See "Removing computers from a group" on page 38.

Adding computer groups

When you create a group for computers, the name is added to the Computer Groups tree in the Assets view. You can double-click Computer Groups in the left pane of the Assets view to display or hide the groups that you have created.

You can add a computer to more than one group, but you can only have one incremental backup job per volume assigned at a time on the selected computer (does not apply to full backup jobs).

To add computer groups

1. In the Assets view of the console, on the Computers menu, click **Add Computer Group**.
2. In the Group Name text box, type the name that you want to use for the group.
3. Type a description for the computer group.
4. Click **OK**.

Editing computer groups

You can change the name or description of an existing computer group in the console.

To edit computer groups

1. In the Assets view of the console, do one of the following:
   - Click **Computer Groups** in the left pane, and then select a group in the right pane.
   - Double-click **Computer Groups** in the left pane to expand the tree, and then select a group name.
2. On the Computers menu, click **Edit Computer Group**.
3. Make the changes you want to the group name and description.
4. Click **OK**.

Deleting computer groups

When you delete a computer group, the group name and any computers under that group are removed from the tree. The computers inside the group (including any backup jobs assigned to them) remain in the Managed Computers tree of the Assets view.

See "Removing managed computers" on page 31.

To delete computer groups

1. In the Assets view of the console, click **Computer Groups** to display the list of groups in the right pane of the console.
2. Select the names of the computer groups you want to remove.
3. On the Computers menu, click **Delete Computer Groups**.
4. Click **OK**.

Adding computers to a group

After you have created a computer group, you can customize the group by adding or removing computers that you have added to the LiveState Recover Manager database.

You use traditional file selection methods in the console to select one or more computers that you want to add to a computer group.

To add computers to a group

1. On the View menu, click **Assets**.
2. Click **Managed Computers** to display a list of computers you can add in the right pane of the console.
3. Select the computers you want to add to a group.
4. On the Computers menu, click **Add Computers to Group**.
5. In the Add computer to Group dialog box, select a computer group from the drop-down list.
6. Click **OK**.

Removing computers from a group

When you remove a computer from a group, the computer will still appear in the Managed Computers tree in the Assets view because it is already integrated with the Symantec LiveState Recovery Manager console and server.

See "Removing managed computers" on page 31.

To remove computers from a group

1. On the View menu, click **Assets**.
2. Double-click **Computer Groups** to display a list of computer groups in the tree.
3. Select a computer group name that contains the computers you want to remove from the group.
4. Select the computers you want to remove in the right pane of the console.
5. On the Computers menu, click **Remove Computers from Group**.

Where to go from here

After you have integrated computers into the console, you can create and deploy backup jobs to those computers.

See "Creating backup jobs" on page 60 or "Assigning backup jobs" on page 67.

Chapter 3

Administering backup jobs

This chapter includes the following topics:

- About backup jobs
- About incremental backup jobs
- Creating backup jobs
- Assigning backup jobs
- Organizing backup jobs
- Monitoring computers
- Recovering files or disks

About backup jobs

This section contains the following:

- Information to help you create backup images
  See "Tips for creating backup images" on page 42.
  See "Backing up dual-boot systems" on page 43.
  See "Backing up VSS-aware databases" on page 43.
  See "Backing up non-VSS-aware databases" on page 54.
- Information about storage locations for backup images, and their advantages and disadvantages
  See "Storage options for backup images" on page 45.
- Information about general options that you can use when creating backup images
  See "General options for creating backup images" on page 48.

- Information about advanced options that you can use when creating backup images
  See "Advanced options for creating backup images" on page 50.
  See "Running command files during backup image creation" on page 52.

You can create backup jobs to automate the creation of backup images using a daily, weekly, or monthly schedule. This backup method is useful if you want to create full backup images during off-hours when you are not present, or if you want to create a baseline with incremental backup images without interrupting the normal flow of work.

While the managed computer must be turned on to perform a backup at the scheduled time, the console does not need to be open for the scheduled backup job to take place, nor does a user have to be logged on to the computer.

You can temporarily override a backup job schedule in Symantec LiveState Recovery Manager to create a backup image immediately.

See "Running an existing backup job immediately" on page 64.

You can backup databases.

See "Backing up VSS-aware databases" on page 43.

See "Backing up non-VSS-aware databases" on page 54.

To verify that a backup completed as scheduled, you can view the Home Page on the console and check the status information or select the computer in the Assets view.

Note: Symantec LiveState Recovery Manager supports saving backup image files to a network hard disk or to a local hard disk (including USB, Firewire, Zip, Jaz, and REV drives, and magneto-optical devices). It does not support saving backup image files directly to tape, CD, or DVD.

Tips for creating backup images

The following information may help when you create backup images:

- Symantec LiveState Recovery Manager console does not need to be open for a backup to take place. Therefore, after you create a backup job, you can exit the console. The remote computer that you are managing, however, must be running so a backup or backup job can occur. To verify that a backup was made, check the information in the Backup History tab or the Events tab, both available in the Assets view when you click Managed Computers, then select a computer in the table.

- To test a backup job, click the Backup Jobs tab (in the Assets view of the console click Managed Computers, then select a computer in the table), and then select a backup job listed in the table. Click Backup Jobs > Run Backup Job Now.
- All backup jobs (except backup jobs that you created by running Backup Now) are saved in the Symantec LiveState Recovery Manager database so that you can edit or run them later. See "Running a backup once" on page 65.
- The security remains intact on an NTFS volume when you mount the volume using Backup Image Browser. (Security is maintained for all volumes when mounting.) If, however, you are simply viewing folders and files inside the backup image file using Backup Image Browser tool (that is, the .v2i, .iv2i, or .pqi file is not mounted), there is no security on the volume, folders, or files.
- Do not run a disk defragmentation program on the managed remote computer while a backup image is being created, or unexpected results may occur.
- If you have two or more volumes that are dependent on each other, or they are used as a group by a program like a database service, you should back up the volumes together. With Symantec LiveState Recovery Manager, you can back up multiple volumes simultaneously by selecting two or more volumes in the Create Backup Job wizard.

Backing up dual-boot systems

You can back up dual-boot systems, or systems that are running more than one operating system, even if you have volumes that are hidden within the operating system where you run the product.

Everything on the volume you select is included in the backup, so it will be bootable later if you restore it. An exception is if you back up a bootstrapped operating system, you must back up—and then restore—every volume that includes operating system boot information for your computer to boot the same from a restored system as it did from the original configuration.

Backing up VSS-aware databases

Symantec LiveState Recovery Manager can co-exist with Microsoft VSS (Volume Shadow Copy Service) to automate the process of backing up VSS-aware databases like production Exchange 2003 and SQL 2005 databases, transaction logs on Windows Server 2003, Active Directory, and the latest versions of Oracle. VSS-aware databases are auto-enabled and cannot be turned off.

Note: Licensing Symantec LiveState Recovery on remote computers does not give users any right to use VSS. VSS must be licensed separately from Microsoft, and users must conform to any license agreement or documentation that accompanies VSS.

For information about backing up non-VSS-aware databases, see "Backing up non-VSS-aware databases" on page 54.

VSS allows IT administrators to create a shadow copy backup of volumes on a server. The shadow copy includes all files (including open files).

When a Symantec LiveState Recovery backup job starts, Symantec LiveState Recovery alerts the VSS that a backup image is about to be created. VSS then communicates this information to the VSS-aware databases and puts them into a quiesced (sleep) state. (Symantec LiveState Recovery always attempts to communicate with VSS if it is installed on a desktop or server and tries to provide VSS with information to quiesce databases.)

While in this quiesced state, the databases continue to write to transaction logs, and Symantec LiveState Recovery takes an instantaneous snapshot that also includes any open files. When the snapshot is complete, VSS is notified, the databases are activated, and the transaction logs continue writing to the database. (To verify that there are no errors and that VSS is running, you should check Microsoft error logs.)

While the backup image is being created from the snapshot, the databases and applications return to an active state and continue to write data.

This kind of integration means that you can back up business-critical databases at anytime during the day without affecting productivity.

Additional points for backing up and restoring VSS-aware databases:

- Symantec LiveState Recovery prevents VSS snapshots from occurring during the time Symantec LiveState Recovery is creating a backup image.
- If a full system restore is done from a Symantec LiveState Recovery backup image file, individual files can be restored from a VSS snapshot. However, the recommended restore process is to use Symantec LiveState Recovery to mount the backup image file as a virtual drive (using Backup Image Browser), and then restore the files you need.
- After a full system restore from a Symantec LiveState Recovery backup image, a VSS snapshot that was taken prior to the date and time of the Symantec LiveState Recovery snapshot can no longer be used to restore the entire system.

Warning: Database corruption may occur if the computer is low on hard disk space when you are rebuilding a database at the same time you are running a backup image job. To avoid database corruption, you should quiesce the database before backing it up, and you should not rebuild or restore the database at the same time you are backing it up. Finally, to avoid possible conflict, Symantec LiveState Recovery does not allow you to take VSS snapshots and Symantec LiveState Recovery snapshots at the same time.

Storage options for backup images

You can save backup images to a local hard drive, a network drive, or a local USB, FireWire, or REV drive.

Table 3-1 shows the advantages and disadvantages of using different locations for storing backup images.

Table 3-1 Backup image storage locations

Location	Advantages	Disadvantages
Hard drive	■ Fast create and restore ■ Can schedule unattended backups ■ Inexpensive because drive space can be overwritten repeatedly	■ Uses valuable drive space ■ Vulnerable to loss if the hard drive fails
Network drive	■ Fast create and restore ■ Can schedule unattended backups ■ Inexpensive because drive space can be overwritten repeatedly ■ Protection from local hard drive failure ■ Off-site storage (through existing network backup strategies)	■ Must have supported NIC drivers to restore from Symantec Recovery Disk ■ Must understand and assign the appropriate rights for the users who will perform backups and restores

Table 3-1 Backup image storage locations

Location	Advantages	Disadvantages
USB/FireWire/ REV drive (local)	■ Fast create and restore ■ Can schedule unattended backups ■ Inexpensive because drive space can be overwritten repeatedly ■ Off-site storage is possible ■ Reserves hard drive space for other uses	■ Additional expense for the drive itself ■ Must have supported storage device drivers to restore from Symantec Recovery Disk; could require additional media along with the Symantec Recovery Disk CD

Selecting a storage location for backup images

When you create or schedule a backup job, you can choose the location where the backup image will be stored.

The available backup image storage location options are

- Network file
- Local file

Network file

If you select Network file, the backup images are stored on the network. You need to specify the UNC path (\\server\share) to the folder on the network where you want the backup images stored. Alternatively, you can click Browse to navigate to the appropriate network folder.

Because backup image file names are unique and include the name of the computer, you can use the same network storage location for multiple computers or for groups of computers that you have created in the console.

When you click Next in the wizard, the Connect As window appears. Type a domain or computer name, a user name, and password, and then click OK to continue with the wizard.

The user name you type must have read-write access to the network folders where the backup image files will be stored. The product uses this login information to access the network when you create a backup image.

Local file

If you select Local file, the backup images are stored on the hard drive of the computer that is being backed up. You need to specify the drive and folder (for example, E:\Data_Backups\) where you want the backup images stored.

Warning: It is highly recommended that you save backup images to a secondary hard drive or a network location.

While it is possible to save the backup image to the same partition or volume that you are backing up, it is not recommended for several reasons. As the number or size of backups grows, you will have less disk space available for regular use. Also, the backup image file itself is included in subsequent backups of the partition or volume, increasing the size of those backups. And finally, if the computer suffers a catastrophic failure, like a primary hard drive going bad, you may not be able to recover the backup image you need, even if you save the image to a different partition or volume on the same hard drive.

Scheduling image options

Table 3-2 describes the backup image schedule options that are available:

Table 3-2 Backup image schedule options

Option	Description
Once	One full backup image is created at the date and time you specify for the remote computer. This option applies only to Full Backups.
Weekly	Full Backups: A full backup image is created at the time and days of the week you specify for the remote computer. Base with Incrementals: A base backup image is created at the time and days you specify; incremental backup images are created at the time and interval you specify.
Monthly	Full Backups: A full backup image is created at the time and days of the month you specify for the remote computer. Base with Incrementals: A base backup image is created at the time and days of the month you specify for the remote computer; incremental backup images are created at the time and on the days of the week you specify for the remote computer.

Table 3-2 Backup image schedule options

Option	Description
No schedule (save for later)	Save all of the backup settings except the schedule. You can later run the backup job at your convenience. **To run the backup job later** 1 In the Assets view of the console, do one of the following: ■ Click **Backup Jobs** in the left pane, and then select a backup job in the table ■ Click **Managed Computers** in the left pane, select a computer in the table, and then click the Backup Jobs tab. 2 Select the backup job in the table. 3 On the Backup Jobs menu, click **Run Backup Job Now**. **To assign a schedule to the backup job** 1 In the Assets view of the console, do one of the following: ■ Click **Backup Jobs** in the left pane, and then select a backup job in the table ■ Click **Managed Computers** in the left pane, select a computer in the table, and then click the Backup Jobs tab. 2 Select the backup job in the table. 3 On the Backup Jobs menu, click **Edit Backup Job**, and then complete the scheduling step in the wizard.

General options for creating backup images

When you schedule a backup job, you can set the following general options for the backup images:

- Setting the compression level for backup images
- Verifying a backup image
- Dividing a backup image file into smaller files
- Limiting the number of backup images that are created

Setting the compression level for backup images

When you create a schedule for a backup job, you can choose the compression level for the images.

Table 3-3 describes the available compression levels available:

Table 3-3 Compression levels for backup images

Compression level	Description
None	Uses no compression. This is most useful if storage space is not an issue. However, if you are saving the backup image file to a busy network drive, using high compression may be faster than no compression because there is less data to write across the network.
Standard	Uses low compression for a 40% average data compression ratio on backup image files. This is the default.
Medium	Uses medium compression for a 45% average data compression ratio on backup image files.
High	Uses high compression for a 50% average data compression ratio on backup image files. This is usually the slowest method. When a high compression backup image is created, CPU usage may be higher than normal. Other processes on the computer may also be slower.

Verifying a backup image

If this option is selected in the wizard at the time you create a backup, the backup image file or set of files will be checked to see that all of files are available, the internal data structures in the backup image match the data that is available, and the backup image can be uncompressed to create the expected amount of data (if you selected a compression level at the time of creation).

For steps on how to verify a backup image file *after* it has been created, refer to the Symantec LiveState Recovery product documentation.

Note: Be aware that verifying an image doubles the time (approximately) required to create the backup image.

Dividing a backup image file into smaller files

You can split a backup image file into two or more smaller files. This feature is useful if you are creating or exporting a backup image file that you want to copy

to removable media later for safekeeping. The backup image is split into smaller, more manageable segments. You can then copy the segments onto separate, removable media.

Note: If Symantec LiveState Recovery creates an .sv2i file in addition to the .v2i files, you need to save the .sv2i file on the same media as the first .v2i file.

If you are creating a backup of thousands of files on a computer that has low memory, splitting the backup image into smaller segments may help speed the process.

If a backup image is divided into multiple files, the filenames for subsequent files will be appended with _S01, _S02, and so forth. For example, if the default filename were C_Drive.v2i, the second filename would be C_Drive_S01.v2i, and so on.

Limiting the number of backup images that are created

When this limit is reached, each successive backup image (whether full or base) is first created and stored, and then the oldest, previously created backup image file is deleted (including all associated incrementals if it is a base image) from the same storage location.

Be sure you have enough hard disk space to accommodate the number of backup images you specify, plus one additional backup image.

If you run out of hard disk space before the number of specified backup images is reached, the recurring backup image process will not complete successfully, and a current backup image will not be created.

Advanced options for creating backup images

When you create or schedule a backup job, you can set the advanced options for the backup images.

Table 3-4 describes the advanced options that are available for backup images.

Table 3-4 Advanced options

Option	Description
Use password	If you select this option, you can specify a password for the backup image. A user must type the password before restoring a backup or opening it in Backup Image Browser. You can specify specific password criteria if you are encrypting the backup image.
Use Encryption	See "Encrypting a backup image" on page 51.
Ignore bad sectors during copy	If you want the ability to create a backup even if there are bad sectors on the hard drive, select this option. Although most drives do not have bad sectors, the potential for problems increases during the lifetime of the hard drive.
Disable SmartSector Copying	SmartSector technology speeds up the copying process by only copying clusters and sectors that contain data. However, in some cases, it may be desirable to copy all clusters and sectors in their original layout, whether they contain data. If you want to copy both used and unused clusters and sectors, select Disable SmartSector Copying. **Note:** Selecting this option increases processing time and usually results in a larger backup image file size.

Encrypting a backup image

You can enhance the security of your data by using AES (Advanced Encryption Standard) to encrypt backup image files that you create. This is especially useful if you are storing backup image files on a network and need a high level of security protection against unauthorized access and use.

You can view the encryption strength of a backup image at any time by viewing the properties of the file.

Encryption strengths are available in 128-bit, 192-bit, or 256-bit. While higher bit strengths require longer passwords, the result is greater security for your data. Table 3-5 explains the bit strength and required password length.

Table 3-5 Password length

Bit strength	Password length
128 (Standard)	8 characters or longer
192 (Medium)	16 characters or longer
256 (High)	32 characters or longer

You must enter the correct password before you can access or restore an encrypted backup image file.

Besides bit strength, the make-up of the password can improve the security of your data. For greatest security, backup image passwords should use the following general rules:

- Avoid using consecutive, repeating characters (for example, BBB or 88).
- Avoid using common words that you would find in a dictionary.
- Use at least one number.
- Use both uppercase and lowercase alpha characters.
- Use at least one special character like ({}[],.<>;:'"?/|\`~!@#$%›&*()_-+=).
- Change the password after a set period of time using the Export Backup Image File feature in Backup Image Browser. See the Symantec LiveState Recovery product documentation for more information about using Backup Image Browser.

Note: Passwords are case-sensitive. When you access or restore a password encrypted backup image file, the product prompts you for the password. If you do not enter the correct password or you forget the password, you will not be able to open the backup image. Store the password in a secure place; Symantec has no method for opening encrypted backup image files.

Running command files during backup image creation

To integrate with any backup routines you may be running on the remote computer or to integrate with applications that may be using a volume on the remote computer, you can specify command files (.exe, .cmd, .bat) to run at three different stages during the creation of a backup image:

- Before data capture
- After data capture
- After image file creation

You can also specify the amount of time (in seconds) that a command file should be allowed to run.

The most common use for running command files is to stop and restart non-VSS-aware databases that you want to back up. See "Backing up non-VSS-aware databases" on page 54 for more information.

Note: Any command files that you specify in the Command Files dialog of the wizard must first be copied to the Symantec LiveState Recovery Manager server. (The default path is \Symantec\LiveState\depot\CfgVPro.001 \command.) When you deploy the backup job to remote computers, any command files you specified are also deployed with the backup job. Be sure you have the necessary rights to run each command file.

To use a Visual Basic script file (.VBS) during a backup, you can create a batch file (.BAT) that will run the script. For example, you could create a batch file called STOP.BAT that contains the following syntax:

```
Cscript script_filename.vbs
```

Make sure that `Cscript` precedes the Visual Basic script filename.

Warning: The command files you install and use cannot depend on any user interaction or have a visible user interface while they are running during a backup. You should test all command files you intend to use outside of the product before using them in a backup image process.

When the actual backup image creation begins, the command file runs during the specified stage. If an error occurs while a command file is running, or the command file does not finish in the time you specified (regardless of the stage), the entire backup image creation is ended, the command file is stopped (if necessary), and the error information is logged and displayed.

Table 3-6 describes the three stages of backup image creation.

Table 3-6 Backup image file creation stages

Stage	Description
Before data capture	This stage occurs before the virtual volume image is created. Running a command during this stage lets you prepare for the backup image creation process by stopping (or notifying) any open applications that are using the volume, for example. **Note:** If you use this stage option, be sure the command file has an error recovery mechanism built into it. If the computer has one or more services that must be stopped at this stage, and the command file does not contain any form of error recovery, one or more of the stopped services may not be restarted. This will cause the entire backup image creation process to end immediately; no other command files will run. For more information about virtual volume images and how they are created with Symantec LiveState Recovery, see the Symantec LiveState Recovery documentation.
After data capture	This stage occurs after the virtual volume image is created. Running a command during this stage is typically a safe point for allowing you to resume normal activity on the volume.
After image file creation	This stage occurs after the actual backup image file is created. Running a command during this stage lets you act on the backup image file itself by copying it to an offline location, for example.

Backing up non-VSS-aware databases

With Symantec LiveState Recovery, you can create manual or automatic cold backups or hot backups of non-VSS-aware databases.

Creating a cold backup manually

A manual cold (or offline) backup ensures that all database transactions are committed to the hard disk. You can then use Symantec LiveState Recovery to create the backup, then restart the database.

To create a cold backup manually

1. Stop the database manually.
2. Use Symantec LiveState Recovery Manager to run a backup immediately using the Backup Now feature. See “Running a backup once” on page 65. Symantec LiveState Recovery instantaneously snaps a “virtual volume image” of the database.

3 Manually restart the database anytime after the backup progress bar appears in the Progress and Performance dialog box of Symantec LiveState Recovery.

While the database is restarted, the backup image is already being created from the virtual volume image.

Creating a cold backup automatically

When you automate a cold back up of a non-VSS-aware database, you run a command file in the backup job, before data capture, to stop the database momentarily and commit all transaction logs to the hard disk. This action quiesces the database. Symantec LiveState Recovery will then instantaneously snap a “virtual volume image”. A second command file is run in the backup job to automatically restart the database while the backup image is created from the virtual volume image.

Because the virtual volume snapshot takes only a few seconds to create, the database is in the backup state momentarily, resulting in a minimal number of created log files.

To create a cold backup automatically

1 Create a backup job that includes command files that you have create for the following stages of the backup:

Before data capture	A command file that stops the database.
After data capture	A command file that restarts the database.

2 Use Symantec LiveState Recovery to run the backup job that includes the command files.

Creating a hot backup

If a cold backup is not possible in your organization, the next best available option for backing up non-VSS-aware databases is a hot (or online) backup.

Symantec LiveState Recovery takes a “crash consistent” backup. Such a backup is equivalent to the state of a system that was running when the power failed. A database that can recover from this type of failure can be recovered from a “crash consistent” backup.

To create a hot backup

- Use Symantec LiveState Recovery to create a backup without stopping or restarting the database.

Symantec LiveState Recovery instantaneously snaps a “virtual volume image” from which the backup image is created.

About incremental backup jobs

This section contains the following information:

- Information to help you create incremental backup images
  See “Working with full backups and incrementals” on page 57.
- Information about general options that you can use when creating incremental backup images
  See “Scheduling image options” on page 47.
  See “Event options” on page 58.
  See “Consolidating incremental backup images” on page 59.
- Information about advanced options that you can use when creating incremental backup images
  See “Running command files during backup image creation” on page 52.

You can create backup jobs to automate the creation of backup images using a daily, weekly, or monthly schedule. This backup method is useful if you want to create full backup images during off-hours when you are not present, or if you want to create a baseline with incremental backup images without interrupting your normal workflow.

While the remote computer must be turned on to perform a backup at the scheduled time, the console does not need to be open for the scheduled backup job to take place, nor does a user have to be logged onto the computer.

You can back up a database.

See “Backing up VSS-aware databases” on page 43.

To verify that a backup completed as scheduled, you can check the information in the Backup History tab or the Events tab, both available in the Assets view when you click Managed Computers, and then select a computer in the table. Or, you can see backup status results when you click the Home Page tab in the Home view.

Working with full backups and incrementals

There are two types of backup images that you can schedule: Full backups and base with incremental backups.

Full backups

A full backup has the following advantages and disadvantages:

- A full backup image backs up the entire selected volume or volumes.
- A full backup image is not associated with incremental backup images in any way. Full backups stand on their own, so using full backups is a less complicated backup method than using a base with incrementals.
  You can take a full backup image of a drive (using the Run Backup Job Now feature) even if that drive is currently being tracked using Base with Incrementals.
  See "Running an existing backup job immediately" on page 64.

Incrementals

Note: This feature may not be available on the remote computer in your version of Symantec LiveState Recovery. To upgrade to a version that supports this feature, visit sea.symantec.com.

An incremental backup has the following advantages and disadvantages:

- An incremental backup image saves only the hard disk sectors that have changed since the baseline image or the previous incremental backup was created.
- A baseline image is the same as a full backup image, except that it has incremental tracking turned on for the selected drive.
- A baseline image is associated only with its own incremental backup files.
- Incremental backup images require less time to create than full backups and make better use of storage media.
- Event monitors can be used to trigger the automatic creation of incremental images.
- When using incremental backup images on a monitored volume, if the computer loses power or is shut down abnormally, then on reboot an attempt is made to create an incremental backup image based on the last incremental backup image. (The reconciliation could take as long as a full backup.)

- If you use a base with incrementals to back up a hard drive, when you restore to a given point in time, the baseline image, plus all the incrementals taken up to that point in time, are used for the restore.
  For example, suppose you have a baseline image with eight incremental backups. You decide to restore to the point in time that the fourth incremental was taken. When you restore, the baseline image and the first four incrementals are used to restore the backup.
- When you create a base with incrementals, if you select a hidden drive (partition) and a non-hidden partition in the same backup job, the hidden partition will only be backed up when a base image is specified; no incremental backup images will be created.
- Incremental images can be consolidated, thus reducing the restore to the baseline image and a consolidated incremental image.
  See "Consolidating incremental backup images" on page 59.

Note: The baseline image and all associated incremental backups must be kept together in the same folder. If any image is missing, the backup image set becomes invalid and you will not be able to restore the data.

Event options

When you create a base with incrementals backup job, you can select which events will trigger the automatic creation of incremental images. For example, at the time you log off of a remote computer or install an application, you can have Symantec LiveState Recovery create an incremental image.

Note: This feature may not be available on the remote computer in your version of Symantec LiveState Recovery. To upgrade to a version that supports this feature, visit sea.symantec.com.

Table 3-7 outlines the event options you can enable when you create a base with incrementals.

Table 3-7 Event options

Event	Description
Any user logs on to the computer	An incremental backup is created at the time a user logs on to the computer.
Any user logs off the computer	An incremental backup is created at the time a user logs off of the computer.

Table 3-7 Event options

Event	Description
Any application gets installed	An incremental backup is created at the time a user installs an application on the computer.
The changes on a drive in this job exceed X number of megabytes	An incremental backup is created when changes to the hard drive on the computer exceed a specified number of megabytes.

Consolidating incremental backup images

The baseline image and all of its incrementals taken up to a specific point in time are required when restoring a backup image to a given point in time. Depending on the duration of the backup job, there could be a lot of incremental backup images. You can reduce the amount of storage space for the backup by consolidating multiple incremental backup images to a single incremental backup image. (The baseline image is still required for a restore.)

Note: This feature may not be available on the remote computer in your version of Symantec LiveState Recovery. To upgrade to a version that supports this feature, visit sea.symantec.com.

Depending on the number of incremental image files that are being consolidated, additional memory may be required for restoring or browsing a consolidated incremental image file. Additionally, consolidating backup images over the network may increase network traffic significantly.

Table 3-8 outlines the consolidation options you can set when you schedule a base with incrementals or manually consolidate incremental images.

Table 3-8 Consolidation options

Consolidation	Description
None	No consolidation of incremental images is performed.
Every twelve hours	A consolidation of incremental images that are 12 hours old (or older) is performed every 12 hours. Also, after the first incremental of the day is taken, all incremental files from two days previous are consolidated to a single file.
Every four hours	A consolidation of incremental images that are 4 hours old (or older) is performed every 4 hours. Also, after the first incremental of the day is taken, all incremental files from the two days previous are consolidated to a single file.

See "Creating backup jobs" on page 60.

To consolidate incremental backup images

1. In the Assets view of the console, do one of the following:
   - Click **Managed Computers** to display a list of computers in the right pane.
   - Double-click **Computer Groups**, and then click a group name to display a list of computers in the right pane.
2. Select a computer in the right pane .
3. Click the **Backup History** tab, displayed in the right pane below the list of computers, to view specific backup details for the selected computer.
4. In the list box, right-click on a selected a backup image name.
5. Click **Consolidate Incremental Backups**.
6. Select a range of incremental backups you want to consolidate, and then click **OK**.
7. Click **Yes** to consolidate the selected range of incrementals into a single incremental image file.

See "Consolidating incremental backup images" on page 59.

Creating backup jobs

You can automate the creation of backup images using a daily, weekly, or monthly schedule. If you are creating a base with incrementals (instead of a full backup), you can also specify that certain events, like logging on or off of a computer, or installing a program.

See "Working with full backups and incrementals" on page 57.

By default, filenames for scheduled full backup or base images will be appended with 001.v2i, 002.v2i, and so forth. Filenames for incremental backups based on the base image will be appended with _i001.iv2i, _i002.iv2i, and so forth. For example, if your base image were called C_Drive001.v2i, the first incremental backup would be called C_Drive001_i001.iv2i.

To create backup jobs

1. In the console, do one of the following:
   - In the Assets view of the console, click **Backup Jobs** in the left pane. The backup job you create can later be assigned to the computer or groups of computers you want.

- Double-click **Computer Groups** in the left pane, and then select a group name. The backup job you create will automatically be assigned to all computers in the group.

2 On the Backup Jobs menu, click **Create Backup Job**, and then click **Next**.

3 In the Backup Type dialog box, click one of the following, and then click **Next**:

- **Base with Incrementals**
- **Full Backups**

See "Working with full backups and incrementals" on page 57.

4 Do one of the following, and then click **Next**:

- Click **All Mounted Volumes on Targeted Computer** to back up all volumes that exist on the remote computer (excluding hidden and unmounted volumes).
- Click **By Drive Letter**, and then select the drive letter you want to back up on the remote computer.
  If you are creating a backup job for a single computer, you will also be able to select any hidden and unmounted volumes. A separate backup image file will be created for each volume you select.

If a volume is selected but it is not available for backing up on a particular computer (usually because the volume has been deleted or the entire hard disk has been removed from the computer since Symantec LiveState Recovery was installed), when the backup image is created, it will not include the volume. However, if the program is not aware that the volume is missing, the backup job will result in a backup error.

5 Select the location where you want the backup images stored by doing one of the following:

- Select **Network file**, and then click **Next**. In the Connect As dialog box, specify the domain name, user name, and password to access the location with create/read/write privileges.
- Select **Local file**, and then click **Next**.
  If there is not be enough available space at the specified location where the backup image is being stored, the backup will fail and an error will be reported in the Incidents view and the Home Page view of the Symantec LiveState Recovery Manager console.

See "Storage options for backup images" on page 45.
See "Selecting a storage location for backup images" on page 46.

6 Specify the frequency and time of the backup images, and then click **Next**. Your options are:

- Once (applies to full backups only)

- Weekly
- Monthly
- No schedule (save for later)

See "Scheduling image options" on page 47.

7 If you are creating a base with incrementals, select the events that will automatically create an incremental backup. Your options are:

- Any user logs on to the computer
- Any user logs off of the computer
- Any application gets installed
- The changes on a volume in this job exceed "x" number of megabytes

See "Event options" on page 58.

8 In the Options dialog box, from the **Compression** drop-down list, select the compression level for the backup image.

- None
- Standard
- Medium
- High

See "Setting the compression level for backup images" on page 49.
Results may vary depending on the types of files saved in the volume you are backing up.

9 To determine whether a backup image file or set of files is valid or corrupt immediately following its creation, select **Verify backup image after creation**.

10 To break the backup image file into small segments, select **Divide the backup image into smaller files to simplify archiving**, and then type the maximum size (in MB) for each file.
For example, if you plan to copy a backup image to CDs, specify a file size of 700 MB or less.
See "Dividing a backup image file into smaller files" on page 49.

11 To limit the number of full or baseline backup images saved for each drive, select **Limit the number of backups saved for each drive**, and then type a number in the text field.

When this limit is reached, each successive backup image (whether full or base) is first created and stored, and then the oldest, previously created backup image file is deleted (including all associated incrementals if it is a base image) from the same storage location.

Be sure you have enough hard disk space to accommodate the number of backup images you specify, plus one additional backup image.

If you run out of hard disk space before the number of specified backup images is reached, the recurring backup image process will no longer complete successfully and a current backup image will not be created.

12 In the **Consolidate incrementals** drop-down list, select how often you want incremental backup images consolidated.

- Never
- Every twelve hours
- Every four hours

See "Consolidating incremental backup images" on page 59.

13 Click **Advanced**.

14 In the Advanced Options dialog box, select the options you want to use like encrypting the backup image, and then click **OK**. Your options are:

- Use password
- Use Encryption
- Ignore bad sectors during copy
- Disable SmartSector Copying

See "Advanced options for creating backup images" on page 50.

15 Click **Next**.

16 If appropriate, specify a command file (.exe, .cmd, .bat) from each drop-down list to run during a particular stage in the backup image creation process, and then specify the amount of time (in seconds) you want the command to run before it is stopped.

If you just added command files to \Symantec\LiveState\depot \CfgVPro.001\command (default path), you may need to restart the wizard to see the files in each stage's drop-down list.

- Before data capture
- After data capture
- After backup file creation

See "Running command files during backup image creation" on page 52.
See "Creating a cold backup automatically" on page 55.

17 Click **Next**.

18 In the Job Name and Description dialog box, type a name and description for the backup job, then click **Next**.

19 In the Completing the Backup Job Wizard dialog box, review the backup options you have selected.

20 Click **Finish** to add the backup job to the Backup Jobs tree in the Assets view.
You can now assign the backup job to a computer, a computer group, or you can add it to a backup job category.
See "Assigning backup jobs" on page 67.
See "Organizing backup jobs" on page 69.

Running an existing backup job immediately

After you assign a backup job to computers, you can use Run Backup Job Now to create–on demand–a full backup image, a baseline backup image, or an incremental backup image of the drive's most recent changes.

For example, you can take a full backup image of a drive even when that drive is currently being tracked using a base with incrementals job.

Note: To use the Run Backup Job Now feature, you must have already created a backup job and assigned it to at least one computer.

See "About incremental backup jobs" on page 56.

See "Running a backup once" on page 65.

To run an existing backup job immediately

1 In the Assets view of the console, do one of the following:

- Double-click **Backup Jobs** in the left pane, and then select a backup job name.
- Double-click **Computer Groups** in the left pane, and then select a group. Click the Backup Jobs tab in the lower-right pane, and then select a backup job name.
- Click **Managed Computers** in the left pane, and then select a computer. Click the Backup Jobs tab in the lower-right pane, and then select a backup job name.

2 On the Backup Jobs menu, click **Run Backup Job Now**.

3 In the Run Backup Job Now dialog box, click the option you want.

A full independent backup	Creates a full backup image using the options saved in the job. Available for full backup and base with incremental jobs.
A baseline backup	Creates a baseline backup image of the selected drives. See "Working with full backups and incrementals" on page 57. Available for base with incremental jobs only.
An incremental backup of recent changes	Creates an incremental backup image using the options saved in the job. Available for base with incremental jobs only.

4 Click **OK**.

Running a backup once

You can use Backup Now to create a backup job that is run once on selected computers that have Symantec LiveState Recovery installed. A backup job that you have created using Backup Now is not scheduled (it is run immediately after you finish the wizard). Also, the backup will not appear in the Backup Jobs tree of the Assets view because it is not saved in the Symantec LiveState RecoveryManager database for future use.

To run a backup once

1 In the Assets view of the console, do one of the following:

- Double-click **Computer Groups** in the left pane to expand the tree, and then select a group name whose computers you want to backup immediately.
- Click **Managed Computers** in the left pane, and then in the right pane, select a computer that has Symantec LiveState Recovery installed on it.

2 On the Backup Jobs menu, click **Backup Now**.

3 Followed the steps in the Volume Backup wizard, then click **Finish** to begin the backup.

Editing backup jobs

You can edit any of the schedule properties for a backup job, except the selected drives. The resulting backup job schedule will be updated on any computers that it is assigned to.

To edit backup jobs

1. In the Assets view of the console, do one of the following:
   - Double-click **Backup Jobs** in the left pane, and then select a backup job name.
   - Double-click **Computer Groups** in the left pane, and then select a group. Click the Backup Jobs tab in the lower-right pane, and then select a backup job name.
   - Click **Managed Computers** in the left pane, and then select a computer. Click the Backup Jobs tab in the lower-right pane, and then select a backup job name.
2. On the Backup Jobs menu, click **Edit Backup Job** to open the selected job in the Backup Job wizard and change its properties.

Renaming backup jobs

You can change the name of any backup job you have created.

To rename backup jobs

1. In the Assets view of the console, do one of the following:
   - Double-click **Backup Jobs** in the left pane, and then select a backup job name.
   - Double-click **Computer Groups** in the left pane, and then select a group. Click the Backup Jobs tab in the lower-right pane, and then select a backup job name.
   - Click **Managed Computers** in the left pane, and then select a computer. Click the Backup Jobs tab in the lower-right pane, and then select a backup job name.
2. On the Backup Jobs menu, click **Rename Backup Job**.
3. Type a new name for the backup job.
4. Click **OK**.

Deleting backup jobs

Deleting a backup job removes it from the console and any remote computers that you have assigned it to.

To delete backup jobs

1. In the Assets view of the console, do one of the following:
   - Double-click **Backup Jobs** in the left pane, and then select a backup job name.
   - Double-click **Computer Groups** in the left pane, and then select a group. Click the Backup Jobs tab in the lower-right pane, and then select a backup job name.
   - Click **Managed Computers** in the left pane, and then select a computer. Click the Backup Jobs tab in the lower-right pane, and then select a backup job name.
2. On the Backup Jobs menu, click **Delete Backup Job**.
3. Click **Yes**.

Assigning backup jobs

You can assign a backup job to multiple computers, or you can assign multiple backup jobs (excluding incremental backup jobs) to a single computer or to computer groups.

Note: Make sure that any backup jobs you assign to a computer or computer group do not overlap in time; otherwise a backup error will occur. Also, only one incremental backup job per volume can be assigned on a remote computer. If you assign a second incremental backup job to the same volume, a backup error will occur.

After a backup job is assigned, the computers will create backup images according to the schedule in the job.

After you have created a backup job, you can assign it in the following ways:

- Assign backup jobs to computers.
  See "Adding backup jobs to computers" on page 68.
- Assign backup jobs to computer groups.
  See "Adding backup jobs to computer groups" on page 68.

Adding backup jobs to computers

You can assign backup jobs to computers that have the Symantec LiveState Recovery agent or full product installed.

Note: Make sure that any backup jobs you assign to a computer or computer group do not overlap in time; otherwise a backup error will occur. Also, only one incremental backup job per volume can be assigned on a remote computer. If you assign a second incremental backup job to the same volume, a backup error will occur.

See "Deploying install packages" on page 32.

See "Creating backup jobs" on page 60.

To add backup jobs to computers

1. In the Assets view of the console, double-click **Backup Jobs** in the left pane.
2. In the Backup Jobs tree, select a backup job.
3. Do one of the following:
   - On the Backup Jobs menu, click **Add Job to Computer**, and then select a computer name from the drop-down list.
   - Drag the backup job from the Backup Jobs tree onto a computer in the Managed Computers tree or the Computer Groups tree.
4. Click **OK**.

Adding backup jobs to computer groups

When you assign backup jobs to a computer group, all computers within that group will have the same backup schedule.

Note: Make sure that any backup jobs you assign to a computer or computer group do not overlap in time; otherwise a backup error will occur. Also, only one incremental backup job per volume can be assigned on a remote computer. If you assign a second incremental backup job to the same volume, a backup error will occur.

To add backup jobs to computer groups

1. In the Assets view of the console, double-click **Backup Jobs** in the left pane.
2. In the Backup Jobs tree, select a backup job.

3 Do one of the following:

- On the Backup Jobs menu, click **Add Job to Group**, then select a computer group name from the drop-down list.
- Drag the backup job from the Backup Jobs tree onto a computer group in the Computer Groups tree.

4 Click **OK**.

Organizing backup jobs

You can organize your backup jobs in the Symantec LiveState Recovery Manager console in the following ways:

- Add backup job categories to the Backup Job tree in the Assets view of the console.
  See "Adding backup job categories" on page 69.
- Assign a backup job to a backup job category.
  See "Adding backup jobs to backup job categories" on page 70.
- Change the name of an existing backup job category.
  See "Renaming backup job categories" on page 70.
- Remove backup jobs from a backup job category.
  See "Removing backup jobs from backup job categories" on page 70.
- Delete existing backup job categories, even if they contain backup jobs.
  See "Deleting backup job categories" on page 71.

Adding backup job categories

You can add any number of backup job categories to the console to help you organize multiple backup job schedules that you use frequently. For example, you could create categories for daily, weekly, or monthly backup jobs, or categories for computer brands or departments in an organization.

To add backup job categories

1 In the Assets view of the console, on the Backup Jobs menu, click **Add Backup Job Category**.

2 In the Category name text box, type the name of the category that will contain backup jobs.

3 In the Category description text box, type a description of the category and the types of backup jobs it will hold.

4 Click **OK**.

Adding backup jobs to backup job categories

You can assign a backup job to one or more backup job categories that you have already created.

To add backup jobs to backup job categories

1. In the Assets view of the console, do one of the following:
   - Click **Backup Jobs** in the left pane, and then select one or more backup job names in the table.
   - Double-click **Backup Jobs** in the left pane to expand the tree, and then select a backup job.
2. On the Backup Jobs menu, click **Add Backup Jobs to Category**.
3. Select a backup job category from the category drop-down list.
4. Click **OK**.

Renaming backup job categories

You can change the name of an existing backup job category. Any backup jobs that are assigned to the renamed category are not affected.

To rename backup job categories

1. In the Assets view of the console, do one of the following:
   - Double-click **Backup Jobs** in the left pane to expand the tree, and then select a category name.
   - Click Backup Jobs in the left pane, and then select a category name in the Name column of the right pane.
2. On the Backup Jobs menu, click **Edit Backup Job Category**.
3. Make the changes you want to the category name or description.
4. Click **OK**.

Removing backup jobs from backup job categories

You can remove (or unassign) one or more backup jobs at once from a backup job category. The backup job becomes reassigned to the root of the Backup Job tree; it is not deleted from the console or unassigned from any computer.

To remove backup jobs from backup job categories

1. In the Assets view of the console, double-click **Backup Jobs** in the left pane to expand the tree.

2 Do one of the following:
   - In the Backup Jobs tree, double-click a backup job category that contains backup jobs, and then select a backup job you want to remove.
   - In the Backup Jobs tree, select a backup job category, and then in the right pane, select one or more backup jobs you want to remove.
3 On the Backup Jobs menu, click **Remove Backup Jobs from Category**.
4 Click **OK**.

Deleting backup job categories

When you delete a backup job category from the console, you have the choice of deleting all the backup jobs that are assigned to that category, or to have the backup jobs automatically moved to the root of the Backup Jobs tree.

To delete backup job categories

1 In the Assets view of the console, double-click **Backup Jobs** in the left pane to expand the tree.
2 In the Backup Jobs tree, select a category name you want to delete.
3 On the Backup Jobs menu, click **Delete Backup Job Category**.
4 Select **Delete any backup jobs that are associated with the category** to erase all backup jobs that appear under the category name.
If you do not select this option, all the backup jobs within that category are moved to the root of the Backup Jobs tree.
5 Click **Yes**.

Monitoring computers

You can use Symantec LiveState Recovery Manager console to do any of the following:

- Review information about a selected computer's drive.
See "Viewing drive details of a computer" on page 72.
- Review backup jobs assigned to a computer.
See "Viewing backup jobs on a computer" on page 73.
- Review information about a selected computer's backup history.
See "Viewing the backup history of a computer" on page 73.
- Review information about a selected computer's events like errors or warnings.

See “Viewing events on a computer” on page 74.

- Cancelling a failed backup job or retrying a failed backup job or install package.
  See “Viewing the status on a computer” on page 74.
- Have the LiveState Agent on the remote computer check the Symantec LiveState Recovery Manager server for any jobs that are waiting.
  See “Processing pending jobs on computers” on page 75.
- Update information that is displayed in the console about a remote computer.
  See “Request updated client information” on page 75.
- Review remote computer and Symantec LiveState Recovery Manager server log files.
  See “Viewing a computer log” on page 76 or “Viewing a server log” on page 76.
- Export the computer information listed in the table that appears in the upper-right pane of the console, to a comma separated value (.csv) file.
  See “Exporting a console table to a file” on page 76.

Viewing drive details of a computer

You can use the Details tab to review specific information about the computer’s hard drive (like the file system used and storage capacity), the storage location for backup images, and when the last backup occurred.

You will also notice in the Details tab window that any unprotected drives (that is, computers that have not yet had a backup job run on them) are blank in the Last Backup column.

To view drive details of a computer

1. In the Assets view of the console, do one of the following:
   - Click **Managed Computers** to display a list of computers in the right pane.
   - Double-click **Computer Groups**, and then click a group name to display a list of computers in the right pane.
2. Select a computer in the upper-right pane whose drive details you want to view.
3. Click the **Details** tab in the lower-right pane to view specific drive details for the selected computer.

Viewing backup jobs on a computer

You can use the Backup Job tab to see what backup jobs are assigned to a selected computer or computer group.

See "Viewing the status on a computer" on page 74.

To view backup jobs on a computer

1. In the Assets view of the console, do one of the following:
   - Click **Managed Computers** to display a list of computers in the right pane.
   - Double-click **Computer Groups**, and then click a group name to display a list of computers in the right pane.
2. Select a computer in the upper-right pane whose assigned backup jobs you want to view.
3. Click the **Backup Job** tab in the lower-right pane to view backup jobs that are currently assigned to the computer.
4. Click the **Details** tab within the Backup Job tab to view detailed information about what is included in the backup job.
5. Click the **Status** tab within the Backup Job tab to view status of the backup job on the selected computer.

Viewing the backup history of a computer

You can view the backup image history of a computer and general status information, like the backup and compression type, and where the image is stored.

You can also view a chronological history of all the backup images taken of selected drives (even if the backup image has been deleted from the storage location), including the original location of each backup image file.

The picture icon next to each drive letter gives you a quick visual indication about the type of backup that is being created (full, baseline, or incremental).

See "Viewing events on a computer" on page 74.

See "Consolidating incremental backup images" on page 59.

To view the backup history of a computer

1. In the Assets view of the console, do one of the following:
   - Click **Managed Computers** to display a list of computers in the right pane.

- Double-click **Computer Groups**, and then click a group name to display a list of computers in the right pane.

2 Select a computer in the upper-right pane whose backup history you want to view.

3 Click the **Backup History** tab in the lower-right pane to view historical backup details for the selected computer.

Viewing events on a computer

You can use the Events tab to display information, errors, or warnings that have occurred on a computer that has Symantec LiveState Recovery.

You can also use the Windows Event Viewer on the remote computer to view events from the application logs.

To view events on a computer

1 In the Assets view of the console, do one of the following:

- Click **Managed Computers** to display a list of computers in the right pane.
- Double-click **Computer Groups**, and then click a group name to display a list of computers in the right pane.

2 Select a computer in the upper-right pane whose events you want to view.

3 Click the **Events** tab in the lower-right pane to view.

4 Select an event in the Type column to display specific information about it in the bottom of the right pane.

Viewing the status on a computer

You can use the Status tab to view status information about such things as Symantec LiveState Recovery, the Symantec LiveState Recovery license, scheduled backup jobs, and client information. You can also cancel a failed backup job or retry a failed backup job or install package from the Status tab.

Computer names with a white X inside a red circle indicate an error such as a failed backup job.

To view the status on a computer

1 In the Assets view of the console, do one of the following:

- Click **Backup Jobs**, then click a backup job in the right pane. In the lower-right pane, click the **Status** tab.

- Double-click **Computer Groups**, and then click a group name to display a list of computers in the right pane. Select a computer name in the table whose status you want to view, and then click the **Status** tab in the lower-right pane to view.
- Click **Managed Computers** to display a list of computers in the right pane. Select a computer name in the table whose status you want to view, and then click the **Status** tab in the lower-right pane to view.

2 Select a row in the Status table to display specific information about it in the bottom of the right pane.

Depending on the status type you have selected (for example, a failed backup job), you can click **Cancel** or **Retry** in the lower-right corner of the Status tab window to cancel the failed operation or try again.

Processing pending jobs on computers

You can use Process Pending Jobs to have the LiveState Agent on the remote computer check the Symantec LiveState Recovery Manager server for any jobs that are waiting. If jobs are found, they are processed at once.

To process pending jobs on computers

1 In the Assets view of the console, do one of the following:

- Double-click **Computer Groups** in the left pane to expand the tree, and then select a group. In the right pane, select one or more computers.
- Click **Managed Computers** in the left pane, and then in the right pane, select one or more computers.

2 Right-click on the selected computers, and then click **Process Pending Jobs**.

Request updated client information

When you use the Request updated client information option, the Management Control component on the remote computer resends information back to the Symantec LiveState Recovery Manager server regarding the state of the computer, backup status, hard drive information, and so forth.

As the remote computer responds to the request, any information that needs to be updated will appear within a brief period of time in the console interface.

Symantec LiveState Recovery must already be installed on the managed computer to use this feature.

To request updated client information

1 In the Assets view of the console, do one of the following:

- Double-click **Computer Groups** in the left pane to expand the tree, and then select a group. In the right pane, select a computer that already has Symantec LiveState Recovery installed.
- Click **Managed Computers** in the left pane, then in the right pane, select a computer that already has Symantec LiveState Recovery installed.

2 On the Computers menu, click **Request Updated Client Information**.
You may need to press **F5** to refresh the information that is displayed in the console.

3 Click **OK**.

Viewing a computer log

You can use View Computer Log to open a selected computer's LiveState Agent install log in the default installed browser window.

To view a computer log

1 In the Assets view of the console, do one of the following:

- Double-click **Computer Groups** in the left pane to expand the tree, and then select a group. In the right pane, select a computer.
- Click **Managed Computers** in the left pane, and then in the right pane, select a computer.

2 On the View menu, click **View Computer Log**.

Viewing a server log

You can use View Server Log to open the Symantec LiveState Recovery Manager server log in the default installed browser window.

To view a server log

- In the console, on the View menu, click **View Server Log**.

Exporting a console table to a file

You can export the computer information listed in the table that appears in the upper-right pane of the console to a comma-separated value (.csv) file. You can then open the file in a spreadsheet or database application.

To export a console table to a file

1 In the Assets view of the console, do one of the following:

- Click **Backup Jobs** in the left pane, and then select any backup job in the right pane to place focus on the table.
- Double-click **Computer Groups** in the left pane to expand the tree, and then select a group. In the right pane, select any computer to place focus on the table.
- Click **Managed Computers** in the left pane, and then select any computer in the right pane to place focus on the table.
- Click **Unmanaged Computers** in the left pane, and then select any computer in the right pane to place focus on the table.

2 On the File menu, click **Export**.

3 In the Save As dialog box, specify the name and location of the file.

4 Click **OK**.
A message is displayed, telling you how many rows were exported.

Recovering files or disks

You can use Recover Files or Disks from inside the console to start Symantec pcAnywhere and connect to a remote computer that you are managing. This connection allows you to restore files on a remote computer using Backup Image Browser or restore an entire volume using Symantec LiveState Recovery.

Table 3-9 describes the software that should be installed so you can use the Recover Files or Disks feature in the Symantec LiveState Recovery Manager console:

Table 3-9 Recovery on remote computer

Location	Software that should be installed
Symantec LiveState Recovery Manager console	■ Symantec pcAnywhere 11.5 (ships on a separate CD with Symantec LiveState Recovery Manager).
Remote computer	■ Symantec pcAnywhere host. ■ Symantec LiveState Recovery - full product. **Note:** The remote computer cannot be a pcAnywhere host if it is currently under XP Remote Desktop (or Terminal Services) control.

If you connect to a remote computer that only has the Symantec LiveState Recovery agent installed (as opposed to the Symantec LiveState Recovery full product), you must use the Symantec Recovery Environment to recovery files or

disks. See the Symantec LiveState Recovery product documentation for more information about Symantec Recovery Environment.

After pcAnywhere is installed, you can launch the program directly from the console to deploy pcAnywhere hosts to all managed computers you will want to connect to for recovery tasks using Symantec LiveState Recovery. For more information about using pcAnywhere and deploying hosts, see the Symantec pcAnywhere product documentation.

Starting Symantec pcAnywhere from the console

To start Symantec pcAnywhere from the console, make sure you have installed the product on the same computer on which you are running the Symantec LiveState Recovery Manager console.

Note: The pcAnywhere host needs to be installed and running on the remote computer before you can remotely recover files or disks.

After you connect to the remote computer through pcAnywhere, you can either open Backup Image Browser to recover files or folders, or you can open Symantec LiveState Recovery to recover disks.

To start Symantec pcAnywhere from the console

1. In the Symantec LiveState Recovery Manager console, do one of the following:
   - Click **Tools** in the left pane, and then click the Symantec pcAnywhere icon in the right pane.
   - Click **Managed Computers** in the left pane, and then in the right pane, select a computer that has the Symantec LiveState Recovery full product installed on it.
2. On the Computers menu, click **Recover Files and Folders**.

Appendix A

Troubleshooting

This chapter includes the following topics:

- Troubleshooting the product

Troubleshooting the product

Use the troubleshooting information to find solutions to problems that might occur when using Symantec LiveState Recovery Manager.

For additional troubleshooting information, see the Readme.txt file on the product CD, or refer to the Symantec website.

This appendix includes the following information:

- Ports that must be open in a firewall
- How results of Backup Now are displayed in the console
- Adding the server to the console
- Adding a remote computer twice from different installations of the Symantec LiveState Recovery Manager server
- Unknown username error when adding a remote computer
- Discovery of computers gives incorrect status in console

Ports that must be open in a firewall

If you are running the Symantec LiveState Recovery Manager console with remote computers behind a local firewall or using Windows XP Service Pack 2, you must manually configure certain ports so that Symantec LiveState Recovery Manager can communicate with the remote computers.

See “Changing server options” on page 23.

You will need to configure the following ports on each remote computer that is behind a firewall or running Windows XP SP2:

- Port 453–Used by the Symantec LiveState Agent.
- Port 8443–Used by the Symantec LiveState Recovery Manager console for communicating with the Symantec LiveState Recovery Manager server.
- Ports 138 and 139–Used by the File and Printer Sharing service located in the Exceptions tab of Windows Firewall (Windows XP SP2 only).

You cannot configure these ports remotely from Symantec LiveState Recovery Manager because the ports must be open in order for the console and server to communicate with the remote computer.

How results of Backup Now are displayed in the console

When you use the Backup Now feature on a managed computer (a desktop computer, for example) that does not have a backup job assigned to it, the backup status in the Events tab of the computer will indicate that it was successful. However, in the Home Page view, the Desktop pie chart will categorized the computer as “No Backup Jobs Scheduled” instead of “Successfully Backing Up”. This status is accurate.

For a computer to appear in the Successfully Backing Up category of the pie chart, it must have a backup job assigned to it.

Adding the server to the console

If you are adding the computer where the Symantec LiveState Recovery Manager server is installed to the Symantec LiveState Recovery Manager console, you must reboot the server manually after adding the computer.

Following the manual reboot of the server, the computer will appear in the Managed Computers tree of the console.

See “Adding unmanaged computers” on page 30.

Adding a remote computer twice from different installations of the Symantec LiveState Recovery Manager server

Scenario: You have an installation of the Symantec LiveState Recovery Manager server on two different Windows servers and Symantec LiveState Recovery Manager console on two different Windows workstations.

You add a remote computer to the first console through the first server, then shut down the server.

Now, you add the remote computer again but this time to the second console through the second server. The remote computer should be added to the Managed Computers tree view in the second console, but instead, the remote computer appears in the Unmanaged Computers tree view with an error status.

As a result, you will not be able to manage the remote computer on the second server. This is because you are attempting to install the LiveState Agent twice from two different server installations. The second installation of the agent is unable to update the database and configure the agent to communicate with the second server.

There are two solutions:

1. You can perform a “move workstation” to transfer the database into the second server and configure the LiveState Agent to communicate with that server.
2. Or, you can perform an update of the LiveState Agent by removing the computer from the server, then re-adding it through the second server, thereby changing its configuration to communicate with the second server.

Unknown username error when adding a remote computer

When a remote computer is running Windows XP in a workgroup, the default local security policy on the computer forces any connection to the share (usually C$) by using the Guest account. Therefore, when you try to add the computer to the Symantec LiveState Recovery Manager console, you will get an “unknown username or bad password” error.

You can avoid this error if the remote computer is in a network domain. For more information on how to accomplish this so you can add the remote computer to the Managed Computers tree in the console, see the following Web link:

http://www.windowsnetworking.com/pages/article_p.asp?id=266

Discovery of computers gives incorrect status in console

When a computer account is disabled in Active Directory Services the change is not immediately apparent or updated in the Symantec LiveState Recovery Manager console during discovery of computers in a domain or entire network. The change is propagated only after you reboot the remote computer and then you run Discover Computers from the console again.

Appendix B

Using the Tools view

This chapter includes the following topics:

- About the Tools view
- Adding a link to the Tools view
- Editing a link
- Removing a link from the Tools view

About the Tools view

You can use the Tools view in the Symantec LiveState Recovery Manager console to add links (or shortcuts) to external programs, URLs, or files that are outside of the console. You double-click the link to launch the program or open the associated file.

When you install the console, default program shortcut icons for Symantec pcAnywhere, Snap Server™ Manager, and LiveUpdate are automatically added to the Tools view. These program shortcuts are active if you have pcAnywhere or Snap Server Manager installed on the same computer as the console. You cannot edit or remove the default program shortcuts.

In addition, if you have any Symantec LiveState Delivery 6.0 products installed (such as Command Center, Enterprise Manager, or Package Manager), program shortcuts will automatically be added to the Tools view.

Links are displayed in the order that you add them to the Tools view.

Adding a link to the Tools view

You can add links to external program, URLs, or files and launch the link from the Tools view in the console. In the Tools view, you can display links with a

graphical icon of your choice and the link's name below the icon. When you hover the mouse pointer on a link, the name, link location, and description are displayed in a pop-up.

To add a link to the Tools view

1. In the Symantec LiveState Recovery Manager console, on the Tools menu, click A**dd link**.
2. In the Location text box of the Add Tools dialog box, complete the following options:

Location	Do one of the following: ■ Specify the full path to a program file that exists on the computer. (For example, an .exe file.) If necessary, click **Browse** to locate the file. ■ Specify the full path to a file that exists on the computer. (For example, a .txt or .doc file). If necessary, click **Browse** to locate the file. ■ Specify the full path to a Web link. The Web link path must begin with **http://**, **https://**, or **www** so that it can open correctly using the browser that is installed on the computer.
Description	Type a description for the link. The text will appear in a pop-up when you hover on the link. A description is optional.
Display name	Type the name that you want displayed below the link's graphical icon. A display name is optional.
Display image	Specify the path to a graphic image file that you want to represent the link. Valid graphic image file formats include .jpg, .gif, or .png. Icon files (.ico) are not supported. If you do not specify an image file (or if the file you chose is invalid or not available), Symantec LiveState Recovery Manager will supply one of three default images based on the type of link you are creating (an executable, URL, or file).
Start in	Specify a folder path that contains files that the program may need to use. If this box is left empty, the default install directory path for the program is used.

3. Click **OK**.

Editing a link

You can edit links that you have created. Default links that were installed with Symantec LiveState Recovery Manager cannot be edited.

To edit a link

1. In the Tools view of the console, select a link that you have created.
2. On the Tools menu, click **Edit link**.
3. In the Edit Tools dialog box, make the changes you want.
4. Click **OK**.

Removing a link from the Tools view

You can use Remove link to delete one link at a time from the Tools view.

To remove a link from the Tools view

1. In the Tools view of the console, select a link that you have created.
2. On the Tools menu, click **Remove link**.

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